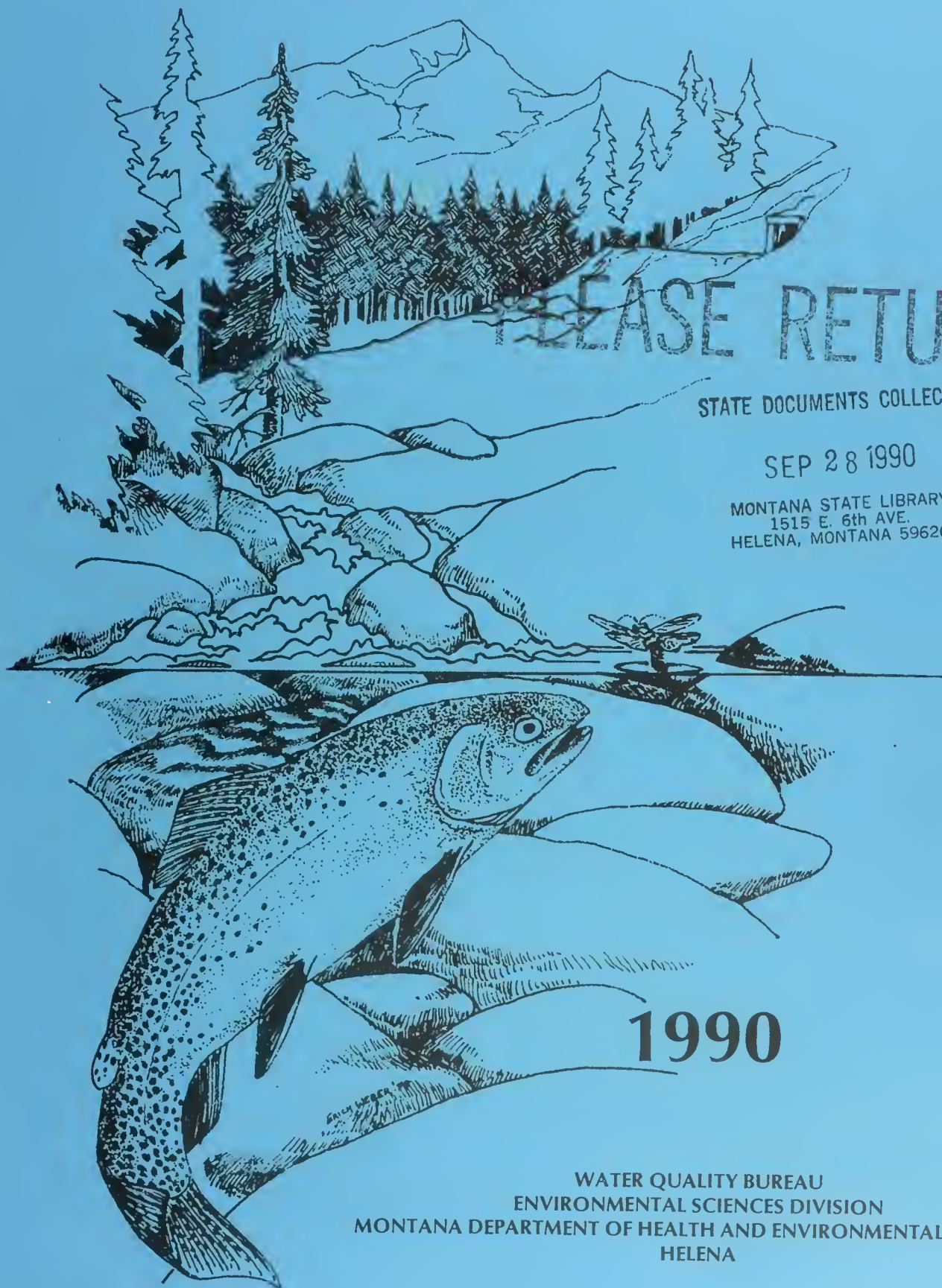


628.16
W3 wa
1990

MONTANA WATER QUALITY



PLEASE RETURN

STATE DOCUMENTS COLLECTION

SEP 28 1990

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

1990

WATER QUALITY BUREAU
ENVIRONMENTAL SCIENCES DIVISION
MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
HELENA

APR 21 1993
FEB 9 1995

MONTANA STATE LIBRARY



3 0864 1002 2390 1

MONTANA WATER QUALITY
1990

Water Quality Management Section
Water Quality Bureau
Environmental Sciences Division
Department of Health and Environmental Sciences
Helena, Montana 59620

The Montana 305(b) Report

June 1990

CONTENTS

CONTENTS	i
SUMMARY	iii
1. INTRODUCTION	1
2. BACKGROUND	3
2.1 Atlas	3
2.2 Classified Uses	4
3. SURFACE WATER QUALITY	7
3.1 Method	7
3.2 Support of Designated Uses	8
3.3 Clean Water Act Goals	11
3.4 Causes and Sources of Pollution	12
3.4.1 Causes of Nonsupport	12
3.4.2 Sources of Nonsupport	14
3.5 Toxic Pollutants	15
4. GROUNDWATER QUALITY	17
5. WETLANDS	19
APPENDIX: IMPAIRED LAKES AND STREAMS	21



Digitized by the Internet Archive
in 2015

<https://archive.org/details/montanawaterqual1990unit>

SUMMARY

Section 305(b) of the federal Clean Water Act requires each state to submit a biennial report to the U.S. Environmental Protection Agency describing the quality of its waters. This is Montana's 1990 305(b) Report.

Montana is a big, varied, and sparsely settled state with a wide range in natural water quality. Montana has over 50,000 miles of streams and almost three-quarters of a million acres of lakes and two million acres of wetlands.

About one quarter of Montana's lake acres and three quarters of the state's stream miles fully support their designated uses. A total of 13,210 miles of Montana streams and 463,765 acres of Montana lakes have one or more impaired uses. Flathead Lake, with its 126,007 acres, fully supports its uses but is threatened by development.

Only about 2 percent of Montana's lake acres and stream miles do not meet the fishable goal of the federal Clean Water Act. An even smaller percentage of lake acres and stream miles do not meet the swimmable goal of the Act.

Lake level alteration in water storage reservoirs is the leading cause of less than full support of designated uses in Montana lakes. Flow alteration, much of which results from dam releases and withdrawals for irrigation, is the leading cause of less than full support in Montana streams.

Point sources of pollution, primarily municipal and industrial wastewater discharges, account for less than 10 percent of the state's impaired surface waters. Nonpoint sources account for the remainder. The leading nonpoint sources of pollution in Montana are agriculture, natural, habitat and hydrologic modification, resource extraction, forest practices, construction, and land disposal.

Levels of toxic pollutants in excess of water quality criteria have been measured in about 40 percent of Montana's lake acres and 5 percent of the state's stream miles. The principal causes of toxic contamination in Montana surface waters are heavy metals, including arsenic from natural geothermal sources in Yellowstone National Park.

The principal sources of groundwater pollution in Montana are underground storage tanks, injection wells, septic tanks, spills and unanticipated releases, abandoned hazardous waste sites, mineral processing, and agricultural activities. The principal causes of groundwater pollution in Montana are volatile organic chemicals, nitrates, cyanide, metals, pesticides and petroleum products.

Little information is available regarding water quality in Montana wetlands. Elevated concentrations of salts, selenium and other trace elements, and pesticides are the principal water quality concerns in Montana wetlands.

Detailed information about lakes and streams in Montana which have one or more impaired uses is provided in an appendix to this report.

1. INTRODUCTION

Section 305(b) of the federal Clean Water Act (Public Law 92-500) requires each state to submit a report every even-numbered year to the U.S. Environmental Protection Agency (EPA) describing the quality of its surface waters. Section 106(e)(1) of the Act extends this reporting requirement to include groundwater quality. This is Montana's 1990 305(b) Report to EPA.

In the body of this report are presented statewide summaries of water quality conditions in streams, lakes and reservoirs, wetlands, and groundwaters. This summary information is presented according to EPA guidelines.¹ Detailed information on each stream segment, lake or reservoir having one or more impaired use is provided in the appendix.

The 305(b) Report is the leading document in Montana for guiding water quality management decisions and for reporting on progress in achieving the goals of the federal Clean Water Act and the state Water Quality Act. EPA uses the state 305(b) Reports for many purposes, including preparation of a national water quality report to the Congress of the United States.

¹ Guidelines for the Preparation of the 1990 State Water Quality Assessment [305(b) Report], U.S. Environmental Protection Agency, Office of Water, Washington, D.C., February 1989.

2. BACKGROUND

2.1 Atlas

Montana is a big but sparsely settled state with over 50,000 miles of streams and almost three-quarters of a million acres of lakes and two million acres of wetlands (Table 2-1). While it ranks fourth in area among the states, Montana has less than one million people and ranks 44th in population.

Table 2-1. Montana atlas.

Parameter	Size
State population	786,690 people ¹
State surface area	147,045 square miles
Number of river basins	16 river basins
Total number of stream miles	51,212 miles ²
Number of border stream miles	0 miles
Number of lakes/reservoirs/ponds	3,956 lakes ³
Acres of lakes/reservoirs/ponds	740,086 acres ³
Acres of freshwater wetlands	1,882,176 acres ⁴

¹ 1980 census

² Total stream miles in the EPA Reach File (version 2.0)

³ The Montana Department of Fish, Wildlife and Parks' Lake Fishery Data Base includes 1,978 lakes totalling 666,077 acres; it is estimated that this data base includes about one half the state's lakes and 90% of the state's lake acres. The lakes not included in the DFWP data base are primarily small, high-elevation, back country lakes.

⁴ Estimated as 2% of the state's total surface area.

Precipitation falling on Montana drains to three oceans via three major river systems: the Clark Fork-Columbia, the Missouri-Mississippi, and the St. Mary-Saskatchewan-Nelson. The Department of Health and Environmental Sciences has divided the state into 16 river basins for the purpose of water quality management planning and reporting (see appendix).

The state's varied geology, topography, and climate support desert, grassland, forest and alpine ecosystems. This geographic diversity results in a large range of natural water quality, from nearly pure rainwater in some of the western mountains to waters exceeding the salinity of sea water in the eastern part of the state.

Montana's major industries are agriculture, forest products, recreation and tourism, coal and metals mining, oil and gas production, and hydropower. Montana has relatively little in the way of urban development, manufacturing or heavy industry.

2.2 Classified Uses

The several classes of waters in Montana reflect the varied natural conditions in the state and historic water quality problems (Table 2-2). The "I" classification applies to only three streams (Muddy Creek, Prickly Pear Creek, Silver Bow Creek) where near-permanent damage was done to several water uses by resource exploitation in Montana's unregulated past. The "C-1" and "C-2" classifications apply to three other streams (lower Ashley and Rainy Creeks and the upper Clark Fork River) whose waters were at one time unsuitable for drinking, culinary and food processing purposes due to activities of man. The C-1 and C-2 classifications may no longer be appropriate for these streams.

Table 2-2. Water-use classifications for Montana. Source: Montana Surface Water Quality Standards, Administrative Rules of Montana, Title 16, Chapter 20.

A-CLOSED CLASSIFICATION: Waters Classified A-Closed are suitable for drinking, culinary and food processing purposes after simple disinfection.

A-1 CLASSIFICATION: Waters classified A-1 are suitable for drinking, culinary and food processing purposes after conventional treatment for removal of naturally present impurities.

B-1 CLASSIFICATION: Waters classified B-1 are suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

B-2 CLASSIFICATION: Waters classified B-2 are suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

B-3 CLASSIFICATION: Waters classified B-3 are suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

C-1 CLASSIFICATION: Waters classified C-1 are suitable for bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

C-2 CLASSIFICATION: Waters classified C-2 are suitable for bathing, swimming and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

C-3 CLASSIFICATION: Waters classified C-3 are suitable for bathing, swimming and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers. The quality of these waters is naturally marginal for drinking, culinary and food processing purposes, agriculture and industrial water supply.

I CLASSIFICATION: The goal of the state of Montana is to have these waters fully support the following uses: drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of fishes and associated aquatic life, waterfowl, and furbearers;

All of the classified waters in Montana have use classifications consistent with the fishable and swimmable goals of the federal Clean Water Act (Table 2-3). Although waters on Indian Reservations were declassified in the latest (1988) revision of the Montana Surface Water Quality Standards, they are included in the totals in Table 2-3. The size of these waters is unknown.

Table 2-3. Size of classified waters in Montana.

Type of Water	Use Classification Category			
	Total Waters Classified	Waters Classified for Uses Consistent with Goals of the Clean Water Act		Total Waters Unclassified ³
		Fishable ¹	Swimmable ²	
Lakes (acres)	740,086	740,086	740,086	unknown
Wetlands (acres)	1,882,176	1,882,176 ⁴	1,882,176 ⁴	unknown
Streams (miles)	51,212	51,212 ⁵	51,212 ⁵	unknown
Other ⁶	unknown	unknown	unknown	unknown

¹ The fishable CWA goal is defined as protection and propagation of fish, shellfish, and wildlife.

² The swimmable CWA goal is defined as providing for recreation in and on the water.

³ Waters used solely for storing, treating, and transporting pollutants are not classified; the size of these waters is unknown.

⁴ Although all wetlands are classified for aquatic life and recreational use, most are naturally unsuitable for fish propagation and swimming.

⁵ Includes 58 miles of "I" streams where fish and recreational uses are goals to be achieved.

⁶ Man-made irrigation and drainage systems discharging directly into a stream, lake, pond, reservoir or other classified surface water are also classified; the size of these waters is unknown.

3. SURFACE WATER QUALITY

This year, for the first time, the Department used the EPA Waterbody Tracking System (WBS) and the EPA Reach File (version 2.0) in completing its biennial assessment of surface water quality. These aids allowed for a much more accurate estimate of stream miles, both impaired and unimpaired, and for a much more systematic assessment of lakes and streams than what has been accomplished in the past.

Only Montana's larger lakes and reservoirs are currently included in the EPA Reach File. This greatly limits the scope of the WBS for tracking water quality in Montana lakes. However, most of the lakes not included in the Reach File fully support their designated uses and EPA continues to add more lakes and stream segments with each update. For this report, the Department has manually added to its assessment those few lakes and stream segments that are known to have impaired uses and are not included in the current version of the Reach File.

The following sections summarize the quality of Montana's lakes and streams using a variety of reporting options that are included in the WBS. Detailed information on the water quality status of each impaired lake and stream segment is included in the appendix.

3.1 Method

Information about the quality of Montana's surface waters was derived from three sources:

1. Ambient water quality records in EPA's computerized water quality database (STORET);
2. Published reports of water quality investigations; and
3. Fish biologists, hydrologists, and other water resource management specialists statewide.

Department water quality specialists compared this information to water quality and physical habitat criteria to judge whether beneficial uses were supported or not supported. Use support status, sources and causes of impairment, and other assessment information was then entered into the WBS for each impaired lake and stream segment. (See appendix for detailed information on each impaired lake and stream segment.) The WBS was then instructed to aggregate the assessment information for the statewide summary that follows.

3.2 Support of Designated Uses

Only about one-fourth of Montana's assessed lake acres **fully support** their designated uses, but less than 3 percent of the assessed lake acres **do not support** their designated uses (Table 3-1). The remainder, more than two thirds of the assessed acres, **partially support** their designated uses. Flathead Lake, with its 126,007 acres, is the foremost of Montana's lakes that fully supports its use but is **threatened** by development.

About three quarters of Montana's assessed stream miles **fully support** their designated uses and less than 3 percent of the assessed stream miles **do not support** their designated uses (Table 3-2). A total of 13,210 miles of Montana streams have one or more impaired uses; the majority of these miles -- 11,944 or about one fourth of the assessed miles in the state -- at least **partially support** their designated uses. About 6 percent of Montana's stream miles are **threatened** by development.

Table 3-1. Acres of Montana lakes supporting, partially supporting, and not supporting their designated uses.

Degree of Use Support	Assessment Basis		Totals
	Evaluated	Monitored	
Acres fully supporting	20,351	10,962	31,313
Acres fully supporting but threatened ¹	11,620	126,007	137,627
Acres partially supporting ²	94,552	354,562	449,114
Acres not supporting ²	5,251	9,400	14,651
Totals	131,774	500,931	632,705 ³

¹ Acres threatened is a distinct category and not a subset of acres fully supporting.

² Acreage was not available for some lakes with less than full support of designated uses.

³ Acres of lakes in the EPA Reach File; this figure is smaller than the acres of lakes in the Montana DFWP Lake Fishery Data Base (666,077 acres) and the total estimated lake acres in the state (740,086 acres). Most of the lakes not included in the EPA Reach File fully support their designated uses.

Table 3-2. Miles of Montana streams supporting, partially supporting, and not supporting their designated uses.

Degree of Use Support	Assessment Basis		Totals
	Evaluated	Monitored	
Miles fully supporting	34,348	460	34,808
Miles fully supporting but threatened ¹	3,114	80	3,194
Miles partially supporting	9,971	1,973	11,944
Miles not supporting	1,129	137	1,266
Totals	48,562	2,650	51,212 ²

¹ Miles threatened is a distinct category and not a subset of miles fully supporting.

² Miles of streams in the EPA Reach File.

3.3 Clean Water Act Goals

Only about 2 percent of Montana's Lake acres and stream miles do not meet the fishable goal of the federal Clean Water Act (Tables 3-3 and 3-4). An even smaller percentage of lake acres and stream miles do not meet the swimmable goal. In the judgement of Department water quality specialists, fishing and swimming are attainable in all waters that currently do not support these uses.

Table 3-3. Acres of Montana lakes meeting and not meeting the fishable and swimmable goals of the federal Clean Water Act.

Goal Attainment	Fishable Goal	Swimmable Goal
Acres meeting	226,475	288,934
Acres partially meeting	392,977	332,619
Acres not meeting	13,253	11,151
Acres not attainable	0	0

Table 3-4. Miles of Montana streams meeting and not meeting the fishable and swimmable goals of the federal Clean Water Act.

Goal Attainment	Fishable Goal	Swimmable Goal
Miles meeting	38,474	46,096
Miles partially meeting	11,565	4,536
Miles not meeting	1,173	579
Miles not attainable	0	0

3.4 Causes and Sources of Pollution

The following sections summarize the causes (pollutants) and sources (activities) responsible for less than full support of beneficial uses in Montana lakes and streams.

3.4.1 Causes of Nonsupport

Lake level alteration in water storage reservoirs is the leading cause of less than full support of designated uses in Montana lakes (Table 3-5). Other major causes of pollution in lakes are nutrients, suspended solids, metals, noxious aquatic plants, and organic enrichment, each affecting over one-third of the lake acres in the state.

Flow alteration, much of which results from dam releases and withdrawals for irrigation, is the leading cause of less than full support of designated uses in Montana streams (Table 3-6). Suspended solids and silt, dissolved solids (salinity), nutrients, habitat alteration, metals, thermal modification and bacteria are other significant causes of pollution in state streams.

As Tables 3-5 and 3-6 illustrate, there is considerable overlap of causes affecting the lakes and streams in Montana that do not fully support their designated uses.

Table 3-5. Acres of Montana lakes not fully supporting their designated uses as affected by various cause categories.¹

Cause Category	Major Impact	Moderate/Minor Impact	Total
Lake level alteration	0	363,221	363,221
Nutrients	0	319,316	319,316
Suspended solids	0	310,845	310,845
Metals (includes arsenic)	0	306,242	306,242
Noxious aquatic plants	0	306,019	306,019
Organic enrichment/D.O.	0	257,022	257,022
Siltation	0	79,142	79,142
Thermal modification	0	33,944	33,944
Salinity/TDS/chloride	12,900	12,595	25,495
Pathogen indicators	1,399	9,532	10,931
Habitat alteration	0	6,848	6,848
pH	5,600	0	5,600
Unknown	0	5,028	5,028
Other inorganics (sulfate)	0	3,996	3,996
Filling and draining	353	0	353

¹ Total impaired lake acres in Montana = 463,765 acres

Table 3-6. Miles of Montana streams not fully supporting their designated uses as affected by various cause categories.¹

Cause Category	Major Impact	Moderate/Minor Impact	Total
Flow alteration	584	6,516	7,100
Suspended solids	327	6,646	6,973
Siltation	285	6,032	6,317
Salinity/TDS/chloride	394	5,347	5,741
Nutrients	104	5,497	5,601
Habitat alteration	274	4,547	4,821
Other inorganics (sulfate)	300	4,367	4,667
Metals (includes arsenic)	446	3,326	3,772
Thermal modification	125	2,401	2,526
Pathogen indicators	0	1,609	1,609
Organic enrichment/D.O.	42	805	847
pH	40	673	713
Ammonia	46	331	377
Noxious aquatic plants	0	155	155
Taste and odor	0	138	138
Priority organics	0	52	52
Nonpriority organics	0	39	39
Radiation	0	5	5

¹ Total impaired stream miles in Montana = 13,210 miles

Nonpoint sources of pollution account for all but a small portion of the surface waters in Montana that do not fully support their designated uses (Table 3-7 and 3-8). Point sources, primarily municipal and industrial wastewater discharges, contribute to less than full support in about 1 percent of the state's impaired stream miles.

Among impaired streams, the leading nonpoint sources are agriculture (85 percent of total impaired miles), natural (65%), habitat/hydrologic modification (42%), resource extraction (18%), forest practices (13%), and construction (10%). Among impaired lakes, the leading nonpoint sources are agriculture (82%), natural (73%), habitat/hydrologic modification (65%), forest practices (8%), construction (3%), and land disposal (2%).

As with causes of impairment, there is considerable overlap of sources affecting the lakes and streams in Montana that do not fully support their designated uses.

Table 3-7. Acres of Montana lakes not fully supporting their designated uses as affected by various source categories.¹

Source Category	Major Impact	Moderate/Minor Impact	Total
Point Sources			
Industrial	0	0	0
Municipal	0	5,100	5,100
Municipal pretreatment	0	0	0
Combined sewer overflow	0	0	0
Storm sewers	0	0	0
Other dischargers	0	0	0
Nonpoint Sources			
Agriculture	14,299	364,149	378,448
Forest practices	0	36,292	36,292
Construction	0	15,122	15,122
Urban runoff	0	546	546
Resource extraction	0	1,600	1,600
Land disposal	0	9,708	9,708
Habitat/hydrologic modification	0	299,629	299,629
Natural/other NPS	5,600	332,860	338,460
Unknown	0	0	0

¹ Total impaired lake acres in Montana = 463,765 acres

Table 3-8. Miles of Montana streams not fully supporting their designated uses as affected by various source categories.¹

Source Category	Major Impact	Moderate/Minor Impact	Total
Point Sources			
Industrial	0	339	339
Municipal	46	1,077	1,123
Municipal pretreatment	0	0	0
Combined sewer overflow	0	0	0
Storm sewers	0	0	0
Other dischargers	0	14	14
Nonpoint Sources			
Agriculture	502	10,671	11,173
Forest practices	0	1,690	1,690
Construction	0	1,267	1,267
Urban runoff	0	106	106
Resource extraction	239	2,158	2,397
Land disposal	0	340	340
Habitat/hydrologic modification	300	5,198	5,498
Natural/other NPS	347	8,210	8,557
Unknown	0	0	0

¹ Total impaired stream miles in Montana = 13,210 miles

3.5 Toxic Pollutants

Elevated levels of toxic pollutants have been measured in about 40 percent of Montana's lake acres and 5 percent of Montana's stream miles (Table 3-9). The principal causes of toxic contamination in Montana surface waters are heavy metals, including arsenic from natural geothermal sources in Yellowstone National Park. In recent years, four Montana streams have experienced contamination and (or) public health impacts from toxic pollutants (Table 3-10).

Table 3-9. Acres of Montana lakes and miles of Montana streams monitored for toxic pollutants and with elevated levels of toxic pollutants.¹

Waterbody Type	Size Monitored for Toxics	Size with Elevated Levels of Toxics
Lakes (acres)	459,580	302,247 ²
Wetlands (acres)	unknown	unknown
Streams (miles)	35,461	2,279 ²

¹ Toxic pollutants include the EPA list of priority pollutants (organics, pesticides and metals) plus ammonia and chlorine.

² Includes waters with elevated levels of arsenic derived from natural geothermal sources in Yellowstone National Park.

Table 3-10. Cases of contamination and (or) public health impacts from toxic pollutants in Montana.

Waterbody	Pollutant(s) of concern	Source(s) of Pollutant(s)	Size Affected	Comments
Silver Creek (MT41I006)	metals	mill tailings	20.0 miles	contaminated tissue fishing advisory
Clark Fork River (MT76G001)	metals	mill tailings	17.4 miles	fish kill
Silver Bow Creek (MT76G003)	metals	mill tailings	1.0 miles	fish kill
Racetrack Creek (MT76G004)	pesticides	irrigated crop production	2.0 miles	fish kill

4. GROUNDWATER QUALITY

There are many different sources of groundwater pollution in Montana (Table 4-1). The severity of impacts to groundwater posed by these sources depends upon the hydrogeologic setting, the type and volume of contaminant(s), existing and future beneficial uses of the groundwater, and regulatory controls placed on the pollution sources. The principal causes of groundwater contamination in Montana are volatile organic chemicals, nitrates, cyanide, metals, pesticides, and petroleum products (Table 4-2).

Table 4-1. Sources of Ground Water Contamination in Montana.

SOURCE	RELATIVE PRIORITY OF MAJOR SOURCES
Septic Tanks	3
Municipal landfills	
On-site industrial landfills (excluding pits, lagoons, surface impoundments)	
Other Landfills	
Surface impoundments (excluding oil and gas brine pits)	
Oil and gas brine pits	
Underground storage tanks	1
Injection wells (incl. Class V)	2
Abandoned hazardous waste sites	5
Regulated hazardous waste sites	
Land application/treatment	
Agricultural activities	7
Road salting	
Mineral Processing	6
Spills and Unanticipated Releases	4

Table 4-2. Substances Contaminating Ground Water in Montana.

Organic chemicals:		Metals	<u>X</u>
Volatile	<u>X</u>		
Synthetic	—	Radioactive material	—
Inorganic chemicals:		Pesticides	<u>X</u>
Nitrates	<u>X</u>		
Fluorides	—	Other agricultural	
Arsenic	—	chemicals	
Brine/salinity	—	Petroleum products	<u>X</u>
Cyanide	<u>X</u>		
Other	—	Others (specify)	—

X = Substances of major importance

5. WETLANDS

Relatively little information is available regarding water quality in Montana wetlands. Elevated concentrations of salts, selenium and other trace elements, and pesticides from agricultural and irrigation practices are the principal water quality concerns in Montana wetlands.

In September 1985, Montanans became concerned about contamination of wetlands from naturally occurring selenium and other toxic elements. These concerns first surfaced when articles published by the Sacramento Bee newspaper (and later reprinted in state newspapers) reported findings of selenium in water, sediment, algae and plant material at 23 sites in nine western states. Many of the sites were in or near U.S. Bureau of Reclamation irrigation projects and national wildlife refuges. The Montana sites included Benton Lake National Wildlife Refuge, Lake Bowdoin National Wildlife Refuge, the Sun River Irrigation Project, including Freezeout Lake, and the Huntley Irrigation Project.

In response to the findings published in the Sacramento Bee, the U.S. Department of Interior (DOI) carried out studies to evaluate the extent of contamination by selenium and other toxic constituents at Freezeout Lake and the Sun River irrigation area, and Lake Bowdoin and adjacent areas of the Milk River Basin. Preliminary information showed little reason for concern at the Huntley Irrigation Project.

The final reports for the Lake Bowdoin/Milk River and Sun River studies were published by DOI in 1988. Results have demonstrated contamination of water, bottom sediment, and biological tissues at Freezeout Lake and Benton Lake. Elevated levels of some toxic constituents were found to be associated with saline seeps. The largest selenium concentrations in water and bottom sediment were from seeps that surround Benton Lake, with maximum concentrations of 580 micrograms per liter in water and 6.7

micrograms per gram in bottom sediment. Several eared-grebe livers from Freezeout Lake and several coot livers and eggs from Benton Lake had selenium concentrations indicative of contamination.

At Bowdoin National Wildlife Refuge, sampling and analysis of trace constituent concentrations in water did not indicate toxicity problems, although concentrations of arsenic, uranium, and vanadium in the Dry Lake Unit, and boron in Lake Bowdoin were elevated. Bottom sediments in the Dry Lake Unit exhibited chromium, copper, zinc, nickel, vanadium and zinc concentrations that were about double the mean background levels. Elevated levels of boron were found in two coot livers and in potential food items for waterfowl, including plankton and pondweed.

The DOI studies provide important information, but the loss of wetlands continues to be the main concern. Without an accurate wetlands inventory, the actual rate and significance of such losses cannot be measured.

The U.S. Fish and Wildlife Service (USFWS) is conducting a nationwide inventory of wetlands that will expand on a partial survey done in the 1950's. The earlier survey was confined to the 15 northern Montana or "Hi-Line" counties and a portion of Lake County.

The latest National Wetlands Inventory is expected to provide greater detail and a more accurate assessment of the quantity of wetlands in Montana. Maps will be prepared to show the location of wetlands. The inventory will identify each area according to the USFWS classification system.

APPENDIX

IMPAIRED LAKES AND STREAMS

The tables that follow provide detailed information about lakes and streams in Montana which have one or more uses impaired by pollution. Impaired lakes and streams are grouped and listed alphabetically within each of the state's 16 river basins. River basins are covered in the order shown on Figure A-1. The tables include information on downstream receiving water, size of the impaired lake or stream segment, probable impaired use(s), degree of use support, probable causes and sources of impairment, and magnitude of causes and sources. Table A-1 contains a key to abbreviations used in the tables.

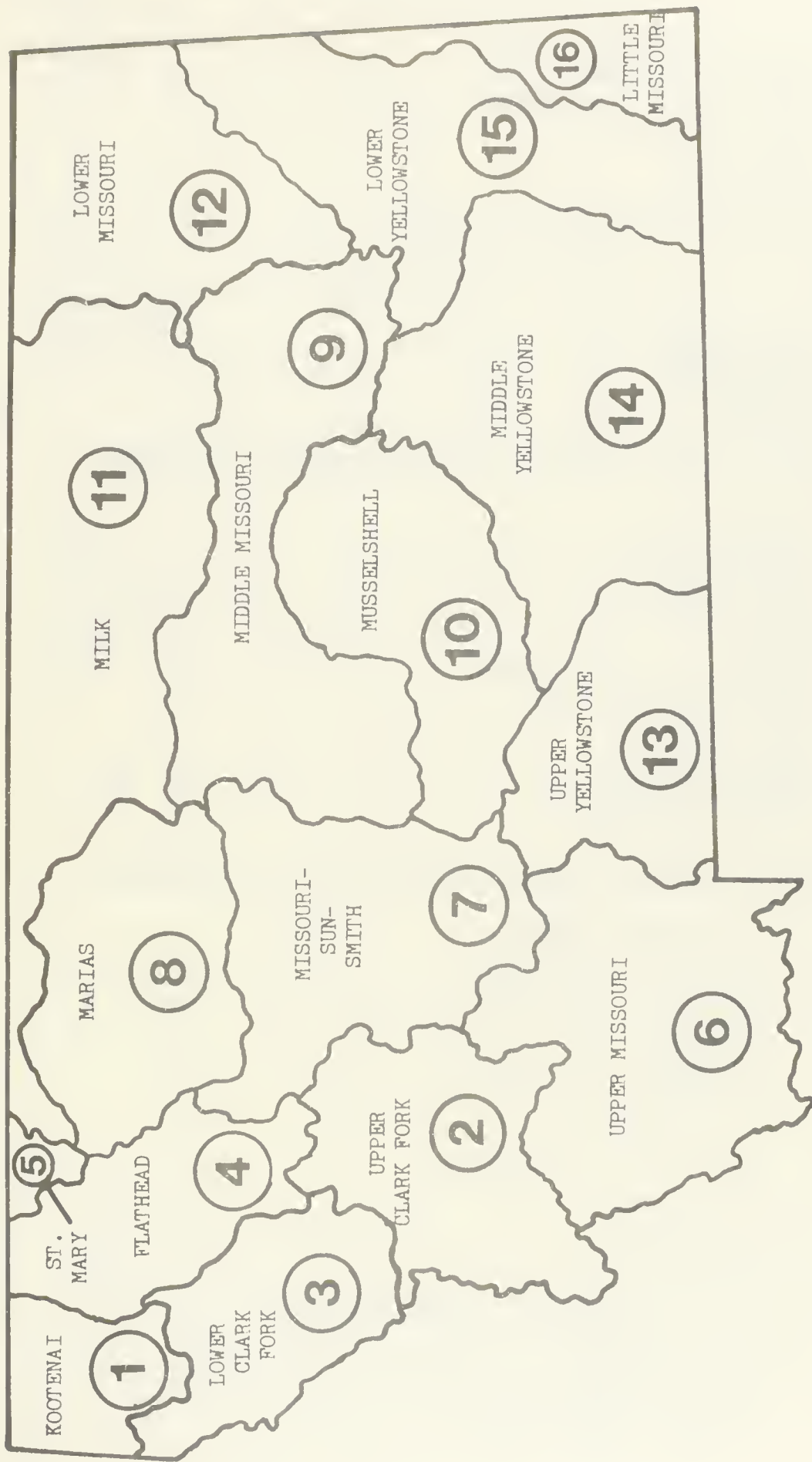


Figure A-1. Montana River Basins.

Table A-1. Codes for abbreviations used in appendix tables of impaired lakes and streams.

USE SUPPORT STATUS

AC - cold water aquatic life
 AW - warm water aquatic life
 AG - agriculture (irrigation and stock watering)
 P - public water supply
 I - industrial
 R - recreation
 (N) - not supporting designated use
 (P) - partially supporting designated use

LAKE TROPHIC STATUS

O - oligotrophic
 M - mesotrophic
 E - eutrophic
 U - unknown

SOURCES OF USE IMPAIRMENT AND MAGNITUDE OF NONSUPPORT

A - agriculture
 C - construction
 H - hydrologic/habitat modification
 L - land disposal
 N - natural
 O - other
 P - point source discharges
 R - resource extraction
 S - silviculture
 U - urban runoff
 (H) - high magnitude
 (M) - moderate magnitude
 (S) - slight magnitude

CAUSES OF USE IMPAIRMENT AND MAGNITUDE OF NONSUPPORT

DO - dissolved oxygen
 FLOW - flow alterations
 HAB - habitat alterations
 MET - metals
 NAQ - noxious aquatic plants
 NH₃ - ammonia
 NPO - nonpriority organics
 NUT - nutrients
 O+G - oil and grease
 PATH - pathogenic organisms
 pH - pH
 RAD - radiation
 SILT - siltation
 SO₄ - sulfate
 T+O - taste and odor
 TDS - salinity/total dissolved solids
 TEMP - temperature
 TSS - total suspended solids
 (H) - high magnitude
 (M) - moderate magnitude
 (S) - slight magnitude

Table A1-1. Kootenai Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Big Cherry Cr. below Snowshoe Cr. (76D002)	Libby Cr.	19.2	AC (P)	MET, SILT, HAB (M)	S, R (M)
Cripple Horse Cr. (76D004)	Lake Koocanusa	10.9	AC (P)	SILT (M)	A, S, N (M)
Dry Cr. above Hwy. 56 (76D002)	Lake Cr.	1.0	AC (P)	FLOW, HAB (M)	C (M)
Fisher R. below Loon Lake (76C001)	Kootenai R.	46.6	AC (P)	SILT, TEMP, HAB (M) NUT (S)	A, S, H (M)
Fortine Cr. above Grave Cr. (76D004)	Tobacco R.	32.3	AC (P)	SILT (M)	A, S (M)
Grave Cr. below Foundation Cr. (76D004)	Fortine Cr.	9.0	AC (P)	SILT (M) FLOW, HAB (S)	A (M) S (S)
Keeler Cr. (76O002)	Lake Cr.	6.8	AC (P)	FLOW, HAB (M) SILT (S)	S (M) /
Kootenai R. below Libby Dam (76D001)	Columbia R.	51.7	AC (P)	FLOW (M) TEMP (S)	H, O (M)
Libby Cr. (76D002)	Kootenai R.	28.6	AC (P)	SILT, FLOW, HAB (M) MET (S)	A, S, C, H (M) R (S)
Lime Cr. (76D004)	Fortine Cr.	3.4	AC (P)	SILT, PATH (M) HAB (S)	A (M)
Snowshoe Cr. below Snowshoe Mine (76D002)	Big Cherry Cr.	4.0	AC (N)	MET (H) SILT (M)	R (H)

Table A1-1. Kootenai Basin impaired streams. (Continued)

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Stanley Cr. above Fairway Cr. (76D002)	Lake Cr.	2.0	AC (P)	MET, SILT (M)	R (M)
Tobacco R. (76D004)	Lake Koocanusa	16.6	AC (P)	SILT (M)	A, S (M)
Therriault Cr. (76D004)	Tobacco R.	4.7	AC (P)	SILT (M) FLOW (S)	C (M) A, S (S)
Wolf Cr. (76C001)	Fisher R.	29.4	AC (P)	SILT, TEMP, HAB (M) NUT (S)	A, S, H (M)

Table A1-2. Kootenai Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Lake Koocanusa	O	28,850.0	AC (P)	FLOW (M)	H (M)
Savage L. (76D005)	M	70.7	AC, R (P)	NUT (M)	L (M)
Schoolhouse L. (76D005)	E	14.6	AC, R (P)	NUT (M)	L (M)

Table A2-1. Upper Clark Fork Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Ambrose Cr. (76H002)	Threemile Cr.	9.9	AC (P)	HAB (M)	N (M) A, C (S)
Bear Cr. (76H002)	Bitterroot R.	16.2	AC (P)	SILT (M)	A (M)
Bearttrap Cr. (76F002)	Blackfoot R.	0.5	AC (N) R (P)	MET (H)	R (H)
Bitterroot R. above Skalkaho Cr. (76H001)	Clark Fork R.	23.7	AC, R (P)	HAB (S)	A, H (S)
Bitterroot R. from Skalkaho Cr. to Eightmile Cr. (76H001)	Clark Fork R.	38.8	AC (P)	FLOW, HAB (M) SILT, TEMP (S)	A, H (M) S (S)
Bitterroot R. below Eightmile Cr. (76H001)	Clark Fork R.	21.5	AC (P)	HAB (M) NUT, DO, TEMP (S)	A, H (M) P, L (S)
Black Bear Cr. (5 mile section) (76F002)	Nevada Cr.	5.0	AC (P)	SILT, HAB (M)	S (M)
Blackfoot R. above Landers Fork (76F001)	Clark Fork R.	11.1	AC (N)	MET (H) SO ₄ , NUT, SILT (M)	R (H) A, S (M)
Blackfoot R. from Landers Fork to Nevada Cr. (76F001)	Clark Fork R.	34.1	AC (P)	MET, SILT, TDS (M)	R, N (M) A, S (S)
Blackfoot R. below Nevada Cr. (76F001)	Clark Fork R.	64.7	AC (P)	NUT, SILT (M) MET (S)	A, S, N (M) R (S)

Table A2-1. Upper Clark Fork Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Blanchard Cr. (76F002)	Clearwater R.	3.0	AC (P)	SILT, HAB (M)	A (M)
Blodgett Cr. below Forest boundary (76H002)	Bitterroot R.	4.0	AC (P)	SILT, FLOW (M) TEMP, HAB (S)	A, H (M) C (S)
Braziel Cr. above mouth (76F002)	Nevada Cr.	2.8	AC (P)	SILT, HAB (M)	S, H (M) A (S)
Brock Cr. (76G004)	Clark Fork R.	11.5	AC (P)	SILT, HAB (M)	A (M)
Cable Cr. (76G004)	Warm Springs Cr.	2.5	AC (P)	MET, NUT, SILT (M)	A, R (M)
Camas Cr. above L. Inez (76F002)	L. Inez	1.0	AC (P)	SILT, FLOW (M) TEMP (S)	A, C (M) H, N (S)
Carpenter Cr. (76G004)	Little Blackfoot R.	9.1	AC (P)	SILT, HAB (M)	R (M)
Chamberlain Cr. above mouth (76F002)	Blackfoot R.	2.0	AC (P)	SILT, FLOW (M)	A (M) S (S)
Clark Fork R. above Cottonwood Cr. (76G001)	L. Pend Oreille	17.4	AC, R (P)	MET, NUT, DO, FLOW, HAB (M) TSS, NAQ (S)	P, A, R, H (M)
Clark Fork R. from Cottonwood Cr. to Little Blackfoot R. (76G001)	L. Pend Oreille	11.8	AC, R (P)	MET, NUT, NAQ (M) DO, FLOW, HAB, TSS (S)	P, R (M) A, H (S)
Clark Fork R. from Little Blackfoot R. to Rock Cr. (76G001)	L. Pend Oreille	58.7	AC, R (P)	MET, NUT, HAB, NAQ (M) SILT, DO, FLOW (S)	P, R, H (M) A, N (S)

Table A2-1. Upper Clark Fork Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Cottonwood Cr. above mouth (76F002)	Blackfoot R.	10.0	AC (P)	SILT, FLOW (M) HAB (S)	A (M)
Cramer Cr. (76G004)	Clark Fork R.	10.2	AC (P)	NUT, SILT (M) HAB (S)	A, S, R, H (M)
Dempsey Cr. above mouth (76G004)	Clark Fork R.	13.0	AC (N)	SILT, FLOW, HAB (H) TDS (S)	A (H)
Dog Cr. (76G004)	Little Blackfoot R.	16.3	AC (P)	SILT, HAB (M)	A, S (M) R (S)
Douglas Cr. (76GJ001)	Flint Cr.	9.0	AC (P)	MET, FLOW (M) SILT (S)	A, R (M)
Douglas Cr. above Cottonwood Cr. (76F002)	Cottonwood Cr.	15.3	AC (P)	SILT, FLOW (M) NUT, TDS, TEMP (S)	A, H (M)
Dunkleberg Cr. (76G004)	Clark Fork R.	7.1	AC (P)	MET, NUT, SILT, FLOW (M)	A, R (M)
E. Fork Lolo Cr. (76H002)	Lolo Cr.	7.4	AC (P)	SILT (M)	S (M)
Elk Cr. (76F002)	Blackfoot R.	12.9	AC (P)	SILT, HAB (M) FLOW (S)	A, S, R, H, N (M)
Elliston Cr. (76G004)	Little Blackfoot R.	4.1	AC (P)	SILT, FLOW (M)	A (M)
Flat Gulch (76E001)	Rock Cr.	2.2	AC (P)	SILT (M)	A (M)
Flint Cr. (76GJ001)	Clark Fork R.	38.5	AC, R (P)	MET, NUT, SILT, FLOW, HAB (M)	A, R (M) S, L (S)

Table A2-1. Upper Clark Fork Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	TEMP (M)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Frazier Cr. above mouth (76F002)	Blackfoot R.	2.0	AC (P)			A (M)
Fred Burr Cr. (76GJ001)	Flint Cr.	10.3	AC (P)	MET (M) SILT (S)		R (M)
Gallagher Cr. above mouth (76F002)	Nevada Cr.	2.7	AC (P)	FLOW (M)		A (M)
Gold Cr. (76G004)	Clark Fork R.	15.3	AC (P)	SILT, FLOW (M) NUT (S)		A, R (M) S (S)
Granite Cr. (76H002)	Lolo Cr.	8.6	AC (P)	SILT, HAB (M) TEMP (S)		S (M) A (S)
Hoover Cr. (76G004)	Clark Fork R.	12.1	AC (N)	SILT, TEMP, FLOW (H) NUT, HAB (M)		A (H) S (M)
Hughes Cr. (76H002)	W. Fork Bitterroot R.	17.8	AC (P)	SILT, HAB (M) TEMP (S)		R (M)
Jefferson Cr. (76F002)	Nevada Cr.	6.2	AC (N)	FLOW, HAB (H) SILT (M)		R, H (H) A (M)
Keno Cr. (76F002)	Elk Cr.	2.0	AC (P)	SILT (M)		S (M)
Little Blackfoot R. above Dog Cr. (76G004)	Clark Fork R.	19.3	AC (P)	SILT (M) MET, FLOW, HAB (S)		A, S (M) N (S)
Little Blackfoot R. below Dog Cr. (76G004)	Clark Fork R.	26.2	AC (P)	NUT, SILT, FLOW (M)		A, C, H (M) R (S)
Lolo Cr. (76H002)	Bitterroot R.	29.1	AC (P)	SILT, HAB (M)		A, C, O (M) S (S)

Table A2-1. Upper Clark Fork Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Lost Cr. above mouth (76G004)	Clark Fork R.	17.0	AC (P)	SILT, FLOW, HAB (M) NUT, TDS (S)	A (M) R (S)
Lost Horse Cr. (76H002)	Bitterroot R.	19.4	AC (P)	SILT, FLOW (M) TEMP (S)	A (M)
Marcum Cr. (76F002)	Blackfoot R.	1.0	AC (P)	SILT (M) PATH (S)	A (M) S (S)
McElwain Cr. (76F002)	Blackfoot R.	2.0	AC (P)	SILT, FLOW (M) NUT, TDS, TEMP (S)	A, H (M)
Mill Cr. (76G004)	Silver Bow Cr.	18.7	AC (P)	MET, SILT, FLOW, HAB (M)	A, R (M) S (S)
Mill-Willow Bypass below Silver Bow Cr. (76G004)	Clark Fork R.	4.2	AC (N)	MET (H) SILT, HAB (M)	R, H, O (H)
Miller Cr. (76H002)	Bitterroot R.	14.4	AC (P)	SILT, HAB (M) TEMP, FLOW (S)	A, S (M) N (S)
Modesty Cr. (76G004)	Clark Fork R.	9.1	AC (P)	SILT, FLOW (M)	A (M)
Monarch Cr. (76G004)	Ontario Cr.	3.6	AC (P)	MET, pH (M) HAB (S)	R (M) S (S)
Mulkey Cr. (76G004)	Clark Fork R.	4.7	AC (P)	SILT (M)	A, S (M)
Nevada Cr. (76F002)	Blackfoot R.	32.5	AC (P)	NUT, SILT, FLOW (M) HAB (S)	A, H, N (M) S, R (S)
N. Fork Douglas Cr. (76GJ001)	M. Fork Douglas Cr.	2.0	AC (N) R (P)	MET (H) NUT (M)	R (H)
Peterson Cr. (76G004)	Clark Fork R.	7.2	AC (P)	SILT, FLOW (M)	A, S (M)

Table A2-1. Upper Clark Fork Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Poorman Cr. (76F002)	Blackfoot R.	14.1	AC (P)	SILT, HAB (M) MET (S)	R, H (M) S (S)
Racetrack Cr. (76G004)	Clark Fork R.	9.0	AC (P)	SILT, FLOW, HAB (M) SO ₄ (S)	A (M) N (S)
Roaring Lion Cr. below Forest boundary (76H002)	Bitterroot R.	2.4	AC (P)	SILT (M)	H (M)
Sandbar Cr. (76F002)	Willow Cr. (Blackfoot R. Trib.)	1.5	AC (P)	MET (M)	R (M)
Sawmill Gulch (76E001)	Rock Cr.	2.0	AC (P)	SILT (M)	S (M) N (S)
Scotchman Gulch (76E001)	Rock Cr.	4.2	AC (P)	SILT (M)	S (M) N (S)
Silver Bow Cr. above Warm Springs Pond 2 (76G003)	Clark Fork R.	31.9	AC, P, R (N) AG (P)	MET, NH ₃ , NUT, SILT, DO, HAB (H)	P, R, H (H) L (S)
Silver Bow Cr. below Warm Springs Pond 2 (76G003)	Clark Fork R.	1.0	AC, P, R (P)	MET, NUT, HAB (M) FLOW (S)	P, R, O (M)
Sleeping Child Cr. (76H002)	Bitterroot R.	13.5	AC (P)	SILT, FLOW (M) TEMP, HAB (S)	A (M) P, C (S)
Snowshoe Cr. (76G004)	Little Blackfoot R.	9.4	AC (P)	SILT, FLOW (M)	A (M)
Spotted Dog Cr. (76G004)	Little Blackfoot R.	11.6	AC (P)	SILT, FLOW (M)	A, S (M)

Table A2-1. Upper Clark Fork Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Telegraph Cr. (76G004)	Little Blackfoot R.	6.3	AC (P)	MET, SILT (M) PH, HAB (S)	S, R (M) A, H (S)
Threemile Cr. (76G004)	Little Blackfoot R.	11.2	AC (P)	SILT, HAB (M)	A (M)
Tin Cup Joe Cr. below Tin Cup L. (76G004)	Clark Fork R.	6.0	AC (P)	SILT, FLOW (M)	A (M)
Union Cr. (76F002)	Blackfoot R.	17.0	AC (P)	SILT, FLOW (M) TEMP (S)	A, C (M) H, N (S)
Wales Cr. (76F002)	Blackfoot R.	2.0	AC (P)	TEMP (M)	A (M)
Ward Cr. (76F002)	Blackfoot R.	3.0	AC (P)	TEMP (M)	A (M)
Warm Springs Cr. (near Warm Springs) below Meyers Dam (76G004)	Clark Fork R.	15.0	AC (P)	SILT, FLOW, HAB (M) MET (S)	A, S, R, H (M) L (S)
Warm Springs Cr. (near Phosphate)(76G004)	Clark Fork R.	12.0	AC (P)	SILT, TEMP, HAB (M)	A (M) S (S)
Warren Cr. (76F002)	Blackfoot R.	2.0	AC (P)	TEMP (M)	A (M)
Washington Cr. (76F002)	Nevada Cr.	4.2	AC (N)	FLOW, HAB (H) SILT (M)	R, H (H) A (M)
W. Fork Ashby Cr. (76F002)	Ashby Cr.	3.0	AC (P)	SILT (M) HAB (S)	S (M) R (S)
W. Fork Bitterroot R. (76H002)	Bitterroot R.	38.6	AC (P)	SILT, HAB (M) TEMP, FLOW, NAQ (S)	S, R (M) A (S)
Willow Cr. (76G004)	Silver Bow Cr.	10.6	AC (P)	SILT, HAB (M)	A (M)

Table A2-1. Upper Clark Fork Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Willow Cr. below Sandbar Cr. (76F002)	Blackfoot R.	3.2	AC (P)	MET (M)	R (M)
Yourname Cr. (76F002)	Blackfoot R.	2.0	AC (P)	SILT, FLOW (M)	A (M) S (S)

Table A2-2. Upper Clark Fork Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
East Fork Res. (76E002)	O	296.8	AC (P)	FLOW (M)	A (M)
Georgetown L. (76GJ002)	E	3655.1	AC, R (P)	NUT, NAQ (M) DO (S)	N (M) C, L (S)
Nevada Cr. Res. (76F003)	E	352.6	AC, R (N)	F + D	A, N (M)
Painted Rocks L. (76H003)	O	803.1	AC (P)	FLOW (S)	A (S)
Salmon L. (76F003)	M	613.0	AC (P)	TEMP, HAB (S)	N (S)
Seeley L. (76F003)	M	1047.7	AC, R (P)	DO (S)	S, C (S)

Table A3-1. Lower Clark Fork Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Camas Cr. (76L002)	Flathead R.	10.8	AC, R (P)	NUT, SILT, TEMP, PATH TSS (S)	A (M)
Cedar Cr. (76M002)	Clark Fork R.	15.9	AC (P)	HAB (M) SILT, FLOW (S)	R (M)
Clark Fork R. from the the Blackfoot R. to Rattlesnake Cr. (76M001)	Lake Pend Oreille	6.6	AC (P)	MET, SILT, TSS (S)	R, H (S)
Clark Fork R. from Rattlesnake Cr. to Fish Cr. (76M001)	Lake Pend Oreille	54.4	AC, R (P)	MET, NUT, DO, T&O (S)	P (M) U, R, L, H (S)
Clark Fork R. below Flathead R. (76N001)	Lake Pend Oreille	97.8	AC (P)	TEMP, FLOW, HAB (M)	H (M)
Crow Cr. (76L002)	Flathead R.	12.8	AC, R (P)	NUT, SILT, TEMP, PATH, TSS (S)	A (S)
Fishtrap Cr. (76N004)	Thompson R.	20.3	AC (P)	SILT, TEMP, FLOW, HAB (S)	A, S (S)
Flathead R. below Kerr Dam (76L001)	Clark Fork R.	79.6	AC (P)	TEMP, FLOW (M) SILT, TSS (S)	A, H (M) N (S)
Grant Cr. (76M002)	Clark Fork R.	11.3	AC (P)	SILT (M) TEMP, FLOW, HAB (S)	H (M) A, C (S)
Hot Springs Cr. above L. Bitterroot R. (76L002)	L. Bitterroot R.	7.0	AW, R (N) AG (P)	SILT, FLOW, TSS (H) NH ₃ , NUT, TDS (M) PATH (S)	A (H) P, N (M)

Table A3-1. Lower Clark Fork Basin impaired streams. (Continued)

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Kennedy Cr. (76M002)	Ninemile Cr.	5.6	AC (P)	MET, SILT (M)	A, R (M)
Little Bitterroot R. below Hubbart Res. (76L002)	Flathead R.	55.1	AC, R (N)	SILT, FLOW, TSS (H) NUT, TDS, PATH (M)	A, N (H)
Lynch Cr. (76N003)	Clark Fork R.	12.3	AC (P)	NUT, SILT (M)	A (M)
Mission Cr. (76L002)	Flathead R.	23.4	AC, R (P)	NUT, SILT, TEMP, PATH, TSS (S)	A (S)
Ninemile Cr. (76M002)	Clark Fork R.	24.6	AC (P)	SILT, HAB (M)	A, R, H (M) S, C (S)
Petty Cr. (76M002)	Clark Fork R.	18.3	AC (P)	SILT (M)	A, C (M) H (S)
Post Cr. (76L002)	Mission Cr.	19.2	AC, R (P)	NUT, SILT, PATH, TSS (S)	A (S)
Spring Cr. (76L002)	Crow Cr.	14.4	AC, AG, R (P)	NUT, SILT (M) HAB, PATH (S)	A (M) C, L (S)
St. Regis R. (76M002)	Clark Fork R.	36.8	AC (P)	HAB (M) SILT (S)	C (M) S (S)
Sullivan Cr. (76L002)	L. Bitterroot R.	29.8	AC, R (P)	SILT, PATH (M) NUT, TDS, TSS (S)	A (M)
Trout Cr. (76M002)	Clark Fork R.	19.6	AC (P)	HAB (M) SILT, FLOW (S)	R (M) S, C, N (S)
West Fork Petty Cr. (76M002)	Petty Cr.	5.0	AC (P)	SILT (M)	A, H (M)

Table A3-1. Lower Clark Fork Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
W. Fork Thompson R. (76N004)	Thompson R.	9.3	AC (P)	SILT, HAB (M)	S (M)
W. Miller Coulee (76L002)	Flathead R.	11.3	AC, R (P)	SILT, PATH, TSS (S)	A (M)

Table A3-2. Lower Clark Fork Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Hubbart Reservoir (76L003)	M	483.1	AC (P)	SILT, FLOW (S)	A (M)
Kicking Horse Reservoir (76L003)	U	800.1	AC (P)	SILT, FLOW (S)	A (M)
Little Bitterroot Lake (76L003)	O	2924.9	AC (P)	FLOW (S)	A, S (S)
Ninepipe Reservoir (76L003)	U	1852.0	AC (P)	SILT, FLOW (S)	A (S)
Noxon Reservoir (76N002)	M	8800.1	AC (P)	SILT, FLOW (M) TEMP (S)	H (M) S (S)

Table A4-1. Flathead Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Ashley Cr. (Upper) from Ashley L. to Smith L. (76LJ008)	Flathead R.	14.2	AC, P, R (P)	SILT, HAB (M) NUT, pH, TEMP, TSS (S)	A, H (M) L (S)
Ashley Cr. (Middle) from Smith L. to Airport Rd. (76LJ008)	Flathead R.	12.0	AC, P, R (P)	SILT, DO, TEMP, HAB (M) NUT, pH, TSS (S)	A, H (M) L (S)
Ashley Cr. (Lower) below Airport Rd. (76LJ008)	Flathead R.	10.2	AC, R (N) AG (P)	NH ₃ , DO (H) NUT, SILT, HAB, PATH, NAQ (M)	P (H) A, C, H (M) U, L (S)
Coal Cr. below S. Fk. Coal Cr. (76LJ003)	M.Fk. Flathead R.	9.5	AC (P)	SILT (M) HAB, TSS (S)	S (M) N (S)
East Spring Cr. (76LJ010)	Stillwater R.	6.0	AC, P, R (P)	NUT, SILT, FLOW (M) TEMP, PATH, TSS (S)	A, C, L (M) H (S)
Granite Cr. below Dodge Cr. (76I002)	M.Fk. Flathead R.	9.9	AC, ND (P)	SILT (M) HAB, TSS (S)	S, N (M)
Jim Cr. (76K003)	Swan R.	11.6	AC (P)	SILT, TSS (M)	S (M)
Logan Cr. above Tally L. (76LJ010)	Stillwater R.	17.9	AC (P)	SILT (M) TSS (S)	S (M)
Red Meadow Cr. (76LJ003)	N.Fk. Flathead R.	13.3	AC (P)	SILT, HAB (M) TSS (S)	S (M) N (S)
Sinclair Cr. (76LJ010)	Stillwater R.	2.0	AC (P)	SILT (M) NUT (S)	A (M) S (S)
Skyland Cr. (76I002)	M.Fk. Flathead R.	4.9	AC (P)	SILT, TSS (M) HAB (S)	S, N (M)

Table A4-1. Flathead Basin impaired streams. (Continued)

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
S. Fork Flathead R. below Hungry Horse Dam (76J001)	Flathead R.	5.1	AC (P)	TEMP, FLOW (M)	H, O (M)
Stillwater R. below Logan Cr. (76LJ010)	Flathead R.	31.8	AC, P, R (P)	SILT (M) NUT, TEMP, PATH, TSS (S)	A (M) S, N (S)
Swift Cr. above Whitefish L. (76LJ012)	Whitefish L.	27.7	AC (P)	SILT, FLOW, TSS (M) NUT (S)	S, N (M)
Whitefish R. below Whitefish L. (76LJ013)	Stillwater R.	18.7	AC, P, R (P)	SILT (M) NUT, TEMP, PATH, TSS (S)	A (M) PS, N (S)

Table A4-2. Flathead Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Echo Lake (76K004)	E	546.0	AC, R (P)	NUT (M)	U, L (M) A, O (S)
Hungry Horse Reservoir (76J002)	O	21,999.0	AC (P)	SILT, FLOW (M) TSS (S)	H (M) S (S)
Lake Mary Ronan (76LJ014)	E	1,520.0	AC, R (P)	NUT (M) SILT, TSS (S)	O (M) A, S, L (S)

Table A5-1. St. Mary Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Divide Cr. (40T001)	St. Mary R.	10.3	AC (P)	FLOW (M)	H (M)
Swiftcurrent Cr. (40T001)	St. Mary R.	5.8	AC, R (P)	SILT, FLOW, PATH (M)	A, H (M)

Table A5-2. St. Mary Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Duck L. (40T003)	M	1399.0	R (N) AC, AG (P)	PATH (H) NUT (M)	A (H) C (M)

Table A6-1. Upper Missouri Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Alder Gulch Cr. (41C002)	Ruby R.	18.3	AC (P)	HAB (M) SILT (S)	R, H (M) A, N (S)
Basin Cr. (41E002)	Boulder R.	14.5	AC (N)	MET (H) SILT (M)	R (H)
Beaverhead R. below Grasshopper Cr. (41B001)	Jefferson R.	44.1	AC, R (P)	SILT, TEMP, FLOW, HAB (M)	A, H (M) N (S)
Big Pipestone Cr. (41G002)	Jefferson R.	19.8	AC (N) P (P)	SILT (H) NUT (S)	A, H, N (H) C (S)
Big Sheep Cr. (41A003)	Red Rock Cr.	32.0	AC, R (P)	SILT, FLOW, HAB (M)	A (M) N (S)
Big Hole R. below Divide Cr. (41D001)	Jefferson R.	47.2	AC (P)	SILT, FLOW, HAB (M)	A, H, O (M)
Birch Cr. (41D002)	Big Hole R.	23.7	AC (N)	FLOW, HAB (H) MET, SILT (M)	A, H (H) R (M) O (S)
Blacktail Deer Cr. (41B002)	Beaverhead R.	38.7	AC, R (P)	SILT, FLOW, HAB (M) NPO (S)	A, H (M) N (S)
Blaine Spring Cr. (41F004)	Madison R.	7.0	AC (P)	FLOW (M)	A (M)
Bloody Dick Cr. (41A003)	Horse Prairie Cr.	26.7	AC, R (P)	SILT, FLOW, HAB (M)	A (M) N (S)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Boulder R. above Basin Cr. (41E001)	Jefferson R.	4.4	AC (P)	HAB (M)	C (M)
Boulder R. from Basin Cr. to Cottonwood Cr. (41E001)	Jefferson R.	35.9	AC (N) P, R (P)	MET, SILT, FLOW, HAB (H) TEMP (M) NUT (S)	A, R (H)
Boulder R. below Cottonwood Cr. (41E001)	Jefferson R.	8.3	AC (P)	MET, SILT, HAB (M) FLOW (S)	A, R (M)
Bridger Cr. (41H003)	E. Gallatin R.	16.3	AC (P)	FLOW (S)	A (S)
Brown's Canyon Cr. above mouth (41A003)	Horse Prairie Cr.	3.0	AC (P)	FLOW (M)	A (M)
Cache Cr. (41H005)	Taylor Fork	5.1	AC (P)	SILT (S)	A, S, C, L (S)
California Cr. (41D004)	Big Hole R.	4.3	AC (P)	MET, SILT, HAB (S)	A, S, R, M (S)
Camp Cr. (41D002)	Big Hole R.	14.8	AC (P)	SILT, FLOW, HAB (M)	A, R, H (M)
Camp Cr. (41H002)	Gallatin R.	4.0	AC, R (P)	SILT, HAB, TSS (M) NUT, FLOW, PATH (S)	A, H, N (M) C (S)
Cataract Cr. (41E002)	Boulder R.	12.8	AC (N) P, R (P)	MET, pH (M) SILT (M)	R (H) A (M)
Cherry Cr. (41F002)	Madison R.	21.8	AC (P)	SILT, FLOW (M)	A (M)
Clark Canyon Cr. (41B002)	Beaverhead R.	6.8	AC (P)	SILT (M)	A (M)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Corral Cr. (41A004)	Red Rock Cr.	3.4	AC (P)	SILT, HAB (M)	H (M) A, S (S)
Cottonwood Cr. (41C003)	Ruby R.	9.5	AC (P)	SILT (M)	A, H, N (M)
Deep Cr. (41A003)	Junction Cr.	4.3	AC, R (P)	SILT, FLOW, HAB (M)	A (M) N (S)
Deep Cr. (41D004)	Big Hole R.	4.4	AC, R (P)	SILT, FLOW (M) HAB (S)	A, H (M) N (S)
Divide Cr. (41D002)	Big Hole R.	20.9	AC (P)	SILT, FLOW, HAB (S)	A, H, O (S)
Dry Boulder Cr. (41G002)	Jefferson R.	9.4	AC (P)	SILT, FLOW (S)	A, R, H (S)
E. Gallatin R. above Bridger Cr. (41H003)	Gallatin R.	5.9	AC (P)	FLOW, HAB (S)	A, C, U (S)
E. Gallatin R. from Bridger Cr. to Reese Cr. (41H003)	Gallatin R.	11.5	AC, R (P)	NUT, HAB (M) NH ₃ , pH, SILT, FLOW, TSS (S)	P (M) A, C, U (S)
E. Gallatin R. below Reese Cr. (41H003)	Gallatin R.	11.5	AC (P)	SILT, HAB, TSS (M) NH ₃ , NUT, pH, FLOW (S)	A (M) P, C (S)
E. Fork Ruby R. (41C003)	Ruby R.	8.4	AC (N)	SILT, HAB (H)	A, H, N (M)
Elkhorn Cr. (41D004)	Big Hole R.	6.4	AC, P, AG, R (N)	MET, pH (H) SILT, HAB (M)	R (H) A, H (M)
Elkhorn Cr. (41E002)	Boulder R.	12.7	AC (P)	MET, HAB (M)	C, R (M) A (S)
Farlin Cr. (41B002)	Beaverhead R.	4.9	AC (P)	SILT (M)	A (M)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Fish Cr. (41A004)	Lower Red Rock L.	11.1	AC (P)	SILT, HAB (S)	A, H (S)
Fish Cr. (41G002)	Jefferson R.	18.7	AC (P)	SILT, FLOW, HAB (S)	A, R, H (S)
Fishtrap Cr. (41D004)	Big Hole R.	13.4	AC (N) P, R (P)	FLOW (H) SILT, HAB (M)	A, H (H)
Francis Cr. (41D004)	Big Hole R.	0.8	AC (P)	SILT, FLOW, HAB (S)	A, H (S)
French Cr. (41B002)	Beaverhead R.	6.9	AC (P)	TEMP, FLOW, PATH (S)	A, H (S)
French Cr. (41D004)	Big Hole R.	7.4	AC, P, AG, R (N)	MET (H)	R, O (H)
Frying Pan Cr. (41A003)	Horse Prairie Cr.	5.1	AC, P, AG, R (P)	MET, SILT, RAD (M)	A, R (M) S, H (S)
Gallatin R. below Spanish Cr. (41H001)	Missouri R.	45.1	AC, R (P)	FLOW (M) SILT (S)	A (M)
Godfrey Cr. (41H002)	Gallatin R.	8.0	AC, R (N) P, AG (P)	NUT, PATH, TSS (H) SILT (M)	A (H)
Gold Cr. (41D004)	Wise R.	4.9	AC (P)	SILT, HAB (S)	A, S, C, H (S)
Governor Cr. (41D004)	Big Hole R.	18.0	AC (N) P, R (P)	FLOW (H) SILT, HAB (M)	A, H (H)
Grasshopper Cr. (41B002)	Beaverhead R.	41.4	AC, R (P)	MET, FLOW, HAB (M) SILT (S)	R, H (M) A, N (S)
Grose Cr. (41D002)	Big Hole R.	0.5	AC (P)	SILT, FLOW (M)	A (M)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Hell Roaring Cr. (41A004)	Red Rock R.	6.8	AC (P)	SILT, HAB (M)	A, H (M)
High Ore Cr. (41E002)	Boulder R.	4.6	AC, P, AG (N)	MET (H) SILT (M)	R (H)
Horse Prairie Cr. (41A003)	Clark Canyon Res.	36.5	AC, R (P)	SILT, FLOW, HAB (M)	A (M) N (S)
Hot Springs Cr. (41F002)	Madison R.	14.6	AC (P)	FLOW, HAB (M)	A, C (M)
Hyalite Cr. (41H003)	E. Gallatin R.	2.4	AC, R (P)	SILT, FLOW, HAB, PATH (M)	A (M) C (S)
Indian Cr. (41C002)	Ruby R.	11.8	AC (P)	FLOW (S)	A (S)
Indian Cr. (41F004)	Madison R.	20.4	AC (P)	FLOW (M)	A (M)
Jack Cr. (41F004)	Madison R.	16.8	AC (P)	FLOW, HAB (M)	A, N (M) S (S)
Jefferson R. (41G001)	Missouri R.	67.9	AC (P)	SILT, FLOW (M) MET, HAB (S)	A, R, H (M) N (S)
Jerry Cr. (41D004)	Big Hole R.	12.9	AC, R (N) P (P)	FLOW (H) SILT, HAB (M)	A, H (H) S, O (M)
Johnson Cr. (41D004)	Big Hole R.	13.4	AC, R (N) P (P)	FLOW (H) SILT, HAB (M)	A, H (H) S (M)
Jones Cr. (41A004)	Red Rock R.	8.4	AC (P)	SILT, HAB (M) FLOW (S)	A, H, N (M)
Joseph Cr. (41D004)	Big Hole R.	5.8	AC (P)	SILT, HAB (S)	H (S)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
La Marche Cr. (41D004)	Big Hole R.	12.7	AC (N) P, R (P)	FLOW (H) SILT, HAB (M)	A, H (H)
Little Sheep Cr. (41A003)	Red Rock R.	13.2	AC, R (P)	SILT, FLOW, HAB (M)	A (M) N (S)
Little Pipestone Cr. (41G002)	Big Pipestone Cr.	12.4	AC (P)	SILT, FLOW (M)	A, N (M)
Little Boulder R. below N. Fork (41E002)	Boulder R.	3.5	AC (P)	HAB (M) FLOW (S)	A, C, R (M)
Little Lake Cr. (41D004)	Big Hole R.	15.3	AC (P)	SILT, HAB (S)	A, H (S)
Long Cr. (41A004)	Red Rock R.	8.1	AC, P, R (P)	SILT, FLOW, HAB (M)	A, H (M) N (S)
Lowland Cr. (41E002)	Boulder R.	10.5	AC (P)	HAB (M)	R (M)
M. Fork Ruby R. (41C003)	Ruby R.	11.5	AC (N)	SILT, HAB (H)	A, H, N (M)
M. Fork of the W. Fork Gallatin R. (41H005)	W. Fork Gallatin R.	7.6	AC (P)	SILT, TSS (S)	C (S)
Madison R. from Hebgen Dam to Quake L. (41F003)	Missouri R.	2.7	AC (P)	FLOW (S)	H (S)
Madison R. from Quake L. to Ennis L. (41F003)	Missouri R.	58.5	P, AG (P)	MET (M)	N (M)
Madison R. below Ennis Dam (41F001)	Missouri R.	42.3	AC, P (P)	MET (M) TEMP (S)	N (M) O (S)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Medicine Lodge Cr. (41A003)	Horse Prairie Cr.	28.7	AC, R (P)	SILT, FLOW, HAB (M)	A (M) N (S)
Mill Cr. (41C002)	Ruby R.	20.1	AC (P)	SILT, TEMP, FLOW (S)	A, R, H, O (S)
Miner Cr. (41D004)	Big Hole R.	18.6	AC (P)	SILT, FLOW, HAB (S)	A, H (S)
Moose Cr. (41D002)	Big Hole R.	15.8	AC (P)	FLOW, HAB (M) SILT (S)	A, R, H (M) O (S)
Muddy Cr. (41A003)	Big Sheep Cr.	12.7	AC (P)	SILT (M)	A (M) O (S)
Mussigbrod Cr. (41D004)	Big Hole R.	14.3	AC, R (N) P (P)	FLOW (H) SILT, HAB (S)	A, H (H)
N. Fork Little Boulder R. (41E002)	Little Boulder R.	8.7	AC (P)	HAB (S)	A, C (S)
N. Fork Big Hole R. (41D004)	Big Hole R.	18.8	AC, R (P)	FLOW (M) SILT, HAB (S)	A, H (M)
Nicholia Cr. (41A003)	Big Sheep Cr.	13.6	AC, R (P)	SILT, FLOW, HAB (M)	A (M) N (S)
Norwegian Cr. (41G002)	Willow Cr. Res.	9.9	AC (P)	FLOW (S)	A, H (S)
O'Dell Cr. (41A004)	Lower Red Rock L.	9.4	AC (P)	SILT, HAB (M) FLOW (S)	A, H (M) N, O (S)
O'Dell Spring Cr. (41F004)	Madison R.	10.0	AC (P)	HAB (M)	A (M)
Oregon Cr. (41D004)	Big Hole R.	2.0	AC (P)	SILT, HAB (S)	C, R, H (S)
Pattengail Cr. (41D004)	Wise R.	16.4	AC (P)	HAB (S)	H (S)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Peet Cr. (41A004)	Red Rock R.	8.3	AC (P)	SILT, HAB (M) FLOW (S)	A, H, N (M)
Pintlar Cr. (41D004)	Big Hole Cr.	15.5	AC (N) P, R (P)	FLOW (H)	A, H (H)
Price Cr. (41A004)	Red Rock R.	8.4	AC (P)	SILT, HAB (S)	A, H, N (S)
Ramshorn Cr. (41C002)	Ruby R.	12.9	AC (P)	MET (M)	R (M)
Red Canyon Cr. (41F006)	Hebgen L.	5.2	AC (P)	SILT (M) FLOW, HAB (S)	A, N (M)
Red Rock R. above Lima Res. (41A004)	Red Rock R.	37.9	AC (P)	SILT, HAB (S)	A, H, N (S)
Red Rock R. From Lima Dam to Clark Canyon Res. (41A001)	Beaverhead R.	39.6	AC, R (P)	FLOW (M) SILT, HAB (S)	A, H (M) N (S)
Reese Cr. (41H003)	E. Gallatin R.	9.5	AC, R (P)	PATH, TSS (M) FLOW (S)	A (M) C (S)
Rock Cr. (41D004)	Big Hole R.	15.5	AC (P)	SILT, FLOW, HAB (S)	A, H (S)
Rocky Cr. (41H003)	E. Gallatin R.	15.0	AC (P)	HAB (M)	A, C (M)
Ruby Cr. (41D004)	Big Hole R.	12.2	AC, R (P)	FLOW (M)	A, H (M)
Ruby Cr. (41F004)	Madison R.	14.8	AC (P)	FLOW (M)	A (M)
Ruby R. above Ruby Res. (41C003)	Jefferson R.	33.5	AC (N)	SILT (H) MET, TSS (M) FLOW, HAB (S)	A, H (H) N (M)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Ruby R. below Ruby Dam (41C001)	Beaverhead R.	27.7	AC, R (P)	MET, SILT, FLOW, TSS (M)	A, R, H, N, O (M)
S. Boulder R. (41G002)	Jefferson R.	21.5	AC, P, R (P)	FLOW (M) PH, SILT, TEMP, HAB (S)	A, H (M) C, R (S)
S. Cottonwood Cr. (41H002)	Gallatin R.	15.5	AC (P)	FLOW (S)	A (S)
S. Fork of the W. Fork Gallatin R. (41H005)	W. Fork Gallatin R.	14.2	AC (P)	SILT, TSS (M)	S (M)
Sage Cr. (41A003)	Red Rock R.	19.5	AC, R (P)	SILT, FLOW, HAB (M)	A (M) N (S)
Sassman Gulch (41D002)	Big Hole R.	1.0	AC (P)	MET (M)	R (M)
Seven Springs Cr. (41D002)	Big Hole R.	0.5	AC (P)	SILT (M)	A (M)
Sevenmile Cr. (41D004)	Big Hole R.	5.1	AC (P)	SILT, HAB (S)	A, C, H (S)
Sixmile Cr. (41D004)	Big Hole R.	3.1	AC (P)	SILT, HAB (S)	A, H (S)
Sourdough Cr. below Limestone Cr. (41H003)	E. Gallatin R.	6.0	AC, R (P)	NUT, FLOW, HAB, PATH (M) TSS (S)	A, C (M) U (S)
Spring Cr. (41B002)	Beaverhead R.	13.6	AC (P)	FLOW (S)	A, H (S)
Steel Cr. (41D004)	Big Hole R.	8.6	AC (P)	SILT, FLOW, HAB (S)	A, H (S)
Swamp Cr. (41D004)	Big Hole R.	13.4	AC (N) P, R (P)	FLOW (H) SILT, HAB (M)	A, H (H)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Taylor Fork (41H005)	Gallatin R.	18.6	AC (P)	SILT, HAB, TSS (S)	A, S, C, R, L, N (S)
Thompson Spring Cr. (41H003)	E. Gallatin R.	4.5	AC (P)	SILT (M)	A (M)
Tom Cr. (41A004)	Upper Red Rock L.	5.6	AC (P)	SILT, HAB (M) FLOW (S)	A, H (M)
Trail Cr. (41D004)	Big Hole R.	21.1	AC (N)	SILT (H) MET, HAB (M)	R, H (H)
Trapper Cr. (41D002)	Big Hole R.	16.7	AC (N)	FLOW, HAB (H) MET, SILT (M)	A, H (H) R (M) O (S)
Uncle Sam Gulch (41E002)	Cataract Cr.	3.0	AC, P, R (N)	MET, pH (H) SILT (M)	R (H)
W. Fork Ruby R. (41C003)	Ruby R.	8.7	AC (N)	SILT, HAB (H)	A, H, N (M)
W. Fork Dyce Cr. (41B002)	Grasshopper Cr.	2.3	AC (P)	SILT, HAB (S)	A, S, R, H (S)
W. Fork Gallatin R. (41H005)	Gallatin R.	3.8	AC (P)	SILT, TSS (S)	S, N (S)
W. Fork Madison R. (41F004)	Madison R.	29.5	AC (P)	SILT (S)	A (S)
Warm Springs Cr. (41D004)	Big Hole R.	19.8	AC (N) P, R (P)	FLOW (H) SILT, HAB (M)	A, H (H)
Warm Springs Cr. (41C003)	Ruby R.	10.3	AC (P)	SILT, FLOW, HAB (S)	A, H, O (S)

Table A6-1. Upper Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Watkins Cr. (41F006)	Hebgen L.	5.3	AC (P)	FLOW, HAB (S)	A (S)
Whitetail Cr. (41G002)	Jefferson R.	30.1	AC, P, R (P)	FLOW (M)	A, H (M)
Willow Cr. (41D002)	Big Hole R.	16.8	AC (P)	SILT, FLOW, HAB (M)	A, R, H (M)
Wisconsin Cr. (41C002)	Ruby R.	17.6	AC (P)	SILT, FLOW, HAB (S)	A, H, O (S)
Wise R. (41D004)	Big Hole R.	29.7	AC (N) P, R (P)	FLOW (H) MET (M) SILT, HAB (S)	A, H (H) R (M) C (S)

Table A6-2. Upper Missouri Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Clark Canyon Res. (41A002)	M	4,887.6	R (P)	FLOW (M)	N (M)
Ennis L. (41F007)	E	3,780.3	AC (P)	SILT, TEMP (M) PATH (S)	N (M) H (S)
Hebgen L. (41F005)	M	12,667.9	P, R (P)	MET (M) NAQ (S)	N (M)
Lima Reservoir (41A005)	M	7,412.9	AC (P)	SILT, TEMP (M) FLOW (S)	A, N (M)
Lower Red Rock L. (41A005)	E	1, 126.0	AC (P)	HAB (M)	N (M) A (S)
Ruby River Res. (41C004)	M	970.1	AC (P)	SILT (M)	A (M)
Upper Red Rock L. (41A005)	E	2,206.1	AC (P)	SILT, TEMP, HAB (M) DO (S)	N (M) A (S)

Table A7-1. Missouri-Sun-Smith Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Avalanche Cr. (41I002)	Canyon Ferry Res.	14.0	AC, R (P)	FLOW, HAB (M)	A, R (M)
Battle Cr. (41I002)	Missouri R.	14.3	AC (P)	SILT, TSS (M)	A (M)
Beaver Cr. (41I002)	Canyon Ferry Res.	8.4	AC (P)	SILT, FLOW (M)	A (M)
Beaver Cr. (41I005)	Holter Lake	16.2	AC (N)	SILT (H) HAB (M)	N (H) A (M) C (S)
Beaver Cr. (41J001)	Smith R.	16.4	AC (P)	SILT, FLOW (M) HAB (S)	A, R (M) C (S)
Belt Cr. below Carpenter Cr. (41Q004)	Missouri R.	68.5	AC, P (N) AG, R (P)	MET, TEMP (H) NUT, SILT, HAB (M) pH (S)	R (H) C (M) A, S (S)
Benton Gulch (41J001)	Smith R.	11.8	AC (P)	SILT, HAB (M) FLOW (S)	A, C, R (M) S (S)
Big Otter Cr. (41Q004)	Belt Cr.	26.4	AC (P)	SILT, HAB (M)	C, H (M) A (S)
Carpenter Cr. (41Q004)	Belt Cr.	5.0	AC, R (N) P (P)	MET (H) pH (M)	R (H) C (M)
Clancy Cr. (41I006)	Prickly Pear Cr.	12.1	AC, P, R (P)	SILT, HAB, TSS (M) MET, NUT (S)	R (M) A (S)
Confederate Gulch (41I002)	Canyon Ferry Res.	14.8	AC (N)	FLOW, HAB (M) SILT (S)	A, R (M)

Table A7-1. Missouri-Sun-Smith Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Corbin Cr. (41I006)	Prickly Pear Cr.	3.0	AC, P, AG, R (N)	MET, pH, TSS (H) SO ₄ (M) TDS (S)	R (H)
Cottonwood Cr. (41QJ002)	Number Five Coulee	9.0	AC, P, R (N) AG (P)	pH (H) MET (M) SILT (S)	R (H) A (S)
Crow Cr. from falls to NFS boundary (41I002)	Canyon Ferry Res.	7.4	AC (P)	HAB (M)	R (M)
Crow Cr. below NFS boundary (41I002)	Canyon Ferry Res.	12.0	AC, R (N)	SILT, FLOW (H)	A, R (M)
Dearborn R. below Falls Cr. (41U001)	Missouri R.	41.6	AC (P)	SILT, TEMP, FLOW (M) HAB (S)	A (M)
Deep Cr. below NFS boundary (41I002)	Missouri R.	15.6	AC (P)	SILT, FLOW, HAB (M)	A, H (M)
Dry Cr. (41I002)	Missouri R.	18.1	AC (P)	SILT, FLOW (M)	A (M)
Dry Fork Belt Cr. (41Q004)	Belt Cr.	16.6	AC, P, R (N)	MET (H) pH (S)	R (H)
Elk Cr. (41J001)	Camas Cr.	7.4	AC (P)	TEMP, FLOW, HAB (M) SILT (S)	A, R (M) C (S)
Flat Cr. below Henry Cr. (41U001)	Dearborn R.	10.6	AC (P)	SILT, FLOW (M) HAB (S)	A (M)
Fool Hen Cr. (41QJ003)	Virginia Cr.	2.0	AC (N) P, AG (P)	MET (H) TSS (S)	R (M)

Table A7-1. Missouri-Sun-Smith Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Ford Cr. above Smith Cr. (41K002)	Smith Cr.	4.0	AC, R (P)	NUT, FLOW (M)	A (M)
Galena Cr. (41Q004)	Belt Cr.	3.0	AC, P, R (N)	MET (H) TSS (S)	R (H)
Hellgate Gulch (41I002)	Canyon Ferry Res.	10.3	AC (P)	HAB (M) pH (S)	R (M)
Hound Cr. above Smith R. (41J001)	Smith R.	5.1	AC (P)	SILT, FLOW (M)	A, H (M)
Indian Cr. (41I002)	Missouri R.	11.0	AC, R (N)	FLOW, HAB (H) SILT (M)	R (H) A (S)
Little Belt Cr. above Belt Cr. (41Q004)	Belt Cr.	3.0	AC, R (P)	NUT, SILT (M) FLOW, HAB (S)	A (M)
Little Camas Cr. (41J001)	Big Camas Cr.	1.8	AC (P)	TEMP, FLOW, HAB (M)	R (M)
Little Prickly Pear Cr. (41QJ003)	Missouri R.	35.0	AC (P)	SILT, FLOW, HAB (M)	A, C' (M)
Lump Gulch (41I006)	Prickly Pear Cr.	15.3	AC, P (P)	MET, TSS (S)	A, R (S)
Magpie Gulch (41I002)	Canyon Ferry Res.	10.6	AC (P)	FLOW, HAB (S)	R (S)
Missouri R. above Canyon Ferry Res. (41I001)	Mississippi R.	43.2	AC, P (P)	MET, NUT, TEMP, TSS (S)	A, R (S)

Table A7-1. Missouri-Sun-Smith Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Missouri R. from Canyon Ferry Dam to Little Prickly Pear Cr. (41I004)	Mississippi R.	25.8	AC, P, R (P)	FLOW (M) MET, NUT, TSS (S)	H (M) P, A (S)
Missouri R. from Little Prickly Pear Cr. to Sun R. (41QJ001)	Mississippi R.	83.8	AC, P, R (P)	NUT, SILT, FLOW, HAB, T + O, TSS (S)	H (M) P, A (S)
Missouri R. from Sun R. to Marias R. (41Q001)	Mississippi R.	70.8	AC, AW, P, R (P)	FLOW, SILT, TSS (M) SO ₄ , NUT (S)	H, O (M) A (S)
Middle Fork Dearborn R. (41U001)	Missouri R.	11.4	AC (P)	SILT (M)	A (M)
Middle Fork Warm Springs Cr. (41I006)	Warm Springs Cr.	6.0	AC (P)	MET (M) SILT, HAB (S)	R (M)
Muddy Cr. (41K003)	Sun R.	36.0	AC, R (N) P, AG (P)	FLOW, HAB, TSS (H) NUT, TDS, TEMP (M) PH (S)	A, H (M) N (M)
Newlan Cr. (41J001)	Smith R.	19.0	AC (P)	SILT, FLOW (M) HAB (S)	A, S (M) H (S)
North Fork Smith R. above mouth (41J001)	Smith R.	7.6	AC (P)	SILT, FLOW (M)	A, S (M) H (S)
Number Five Coulee (41QJ002)	Sand Coulee Cr.	6.0	AC (N) R (P)	pH (H) SILT (M) MET (S)	R (H) A (S)

Table A7-1. Missouri-Sun-Smith Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Prickly Pear Cr. from Spring Cr. to Lump Gulch (41I006)	L. Helena	8.2	AC, AG, R (N) P (P)	MET, HAB (H) SILT, FLOW, TSS (M) PH (S)	R (H) C, H (M) A (S)
Prickly Pear Cr. from Lump Gulch to Hwy. 433 (41I006)	L. Helena	10.0	AC, AG (P)	MET, HAB (M) SILT, FLOW, TSS (S)	C, R, H (M) A (S)
Prickly Pear Cr. from Hwy. 433 to Helena WWTP (41I006)	L. Helena	5.0	AC, P, AG, R (N)	FLOW, HAB (H) MET, SILT, TSS (M)	A (H) C (M) R (S)
Prickly Pear Cr. from Helena WWTP to L. Helena (41I006)	L. Helena	4.0	AC, P, AG, R (N)	NH ₃ , NUT, FLOW, HAB (H) MET, SILT, TSS (M)	P, A (H) C (M) R (S)
Prickly Pear Cr. from L. Helena to mouth (41I006)	Hauser L.	2.8	AC, R (P)	NUT, TEMP (M) TSS (S)	A, R (M)
Sand Coulee Cr. below Number Five Coulee (41QJ002)	Missouri R.	13.4	AC, P, R (N) AG (P)	MET (H) PH (M)	R (H) A, L (S)
Sheep Cr. (41J001)	Smith R.	28.2	AC (P)	SILT (M) FLOW, HAB (S)	A, S (M) C, H (S)
Silver Cr. (41I006)	L. Helena	20.1	AC, R (N) P (P)	MET, FLOW, HAB (H) CN (S)	R (H) A (M)
Sixteenmile Cr. below Lost Cr. (41I002)	Missouri R.	42.1	AC (P)	SILT (M) NUT, DO, HAB (S)	A (M) S, C (S)
Smith R. (41J001)	Missouri R.	98.0	AC (P)	SILT, TEMP, FLOW (M)	A (M) S, R (S)

Table A7-1. Missouri-Sun-Smith Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Spring Cr. below Corbin Cr. (41I006)	Prickly Pear Cr.	2.0	AC, P, AG, R (N)	MET, HAB (H) pH, TSS (M) NUT (S)	R (H)
Sun R. from Gibson Dam to Muddy Cr. (41K002)	Missouri R.	77.2	AC, R (P)	NUT, TEMP, FLOW, TSS (M) SILT (S)	A, H (M)
Sun R. below Muddy Cr. (41K003)	Missouri R.	16.6	AW, R (N) P, AG (P)	FLOW, HAB, TSS (H) NUT, TDS, TEMP (M)	A, H (H) N (M)
Tenmile Cr. (41I006)	Prickly Pear Cr.	21.6	AC, P, R (P)	MET, FLOW (M) pH, SILT, HAB (S)	A, R (M) S, C (S)
Thompson Gulch (41J001)	Smith R.	9.2	AC (P)	SILT, HAB (M)	A, S, R (S)
Trout Cr. (41I005)	Hauser L.	9.0	AC (N)	SILT (H) HAB (M)	A (H) H (M)
Virginia Cr. (41QJ003)	Canyon Cr.	7.4	AC, P, AG (P)	MET (M) TSS (S)	R (M)
Warm Springs Cr. below Middle Fork (41I006)	Prickly Pear Cr.	4.0	AC (P)	MET, TSS (S)	A, R (S)
White Gulch (41I002)	Canyon Ferry Res.	11.6	AC (N) R (P)	FLOW, HAB (H)	A, R (H)
Wilson Cr. above mouth (41I002)	Crow Cr.	3.3	AC (P)	SILT (M)	R (M)

Table A7-2. Missouri-Sun-Smith Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Benton L. (41Q003)	U	5,600.0	AW, P, AG, R (N)	pH, TDS (H) MET, SILT (M)	A, N (H)
Canyon Ferry Res. (41I003)	M	35,179.9	P, R (P)	MET, NUT, NAQ (S)	A, N (S)
Gibson Res. (41K004)	O	1,281.9	AC (P)	SILT, FLOW (M) TSS (S)	A, N (M)
Holter L. (41I007)	M	4,800.1	P, R (P)	NUT, NAQ (S)	A, C (S)
L. Helena (41I007)	E	1,600.0	AC, R (P)	NUT, TEMP, TSS (M)	P, A, R (S)
Willow Cr. Res. (41K004)	M	1,355.6	AC (P)	FLOW (S)	A (S)

Table A8-1. Marias Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Badger Cr. below Whitetail Cr. (41M001)	Two Medicine R.	13.8	AC (P)	FLOW (M)	A (M)
Birch Cr. below Blacktail Cr. (41M001)	Two Medicine R.	31.4	AC, P, AG (P)	SILT, FLOW, HAB (M) TDS (S)	A, N (M) H (S)
Cut Bank Cr. below Willow Cr. (41L001)	Marias R.	45.3	AC, P, R (P)	NUT, SILT, TDS, TEMP, FLOW (S)	A, N (M)
Deep Cr. below Willow Cr. (41O001)	Teton R.	7.2	AC (P)	SILT, FLOW, HAB, TSS (M)	A, N (M)
Depot Cr. below Browning WWTP (41L001)	Willow Cr.	1.0	AC, P, R (P)	NUT (M) NH ₃ , pH (S)	P (M)
Dry Fork Marias R. above Spring Cr. (41P002)	Marias R.	42.5	P (P)	SO ₄ , TDS (S)	A, N (S)
Dry Fork Marias R. below Spring Cr. (41P002)	Marias R.	21.8	AW, P, R (P)	SO ₄ , pH, TDS, TEMP (S)	A, N (S)
Marias R. above Tiber Reservoir (41P001)	Missouri R.	54.7	AC, P, R (P)	TSS (M) NUT, TDS (S)	A, H (M)
Marias R. below Tiber Reservoir (41P004)	Missouri R.	78.7	AC, P (P)	SILT, FLOW (M) TDS, TEMP (S)	A, H, N (M)
N. Fork Muddy Cr. (41O001)	Muddy Cr.	15.4	AC, P (P)	SILT, TDS (M)	A (M)

Table A8-1. Marias Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
N. Fork Teton R. (410001)	Teton R.	16.1	AC (P)	FLOW, HAB (M)	C, N (M)
Old Maids Coulee (41L001)	Cutbank Cr.	19.9	AC, P, AG, R (P)	NUT (M) NH ₃ , SO ₄ , TDS (S)	N (M) R (S)
Pondera Coulee (41P005)	Marias R.	84.7	AC, P (P)	SILT, TDS (M)	A (M) R (S)
Teton R. above Deep Cr. (410001)	Marias R.	28.2	AC, R (P)	FLOW, HAB (M)	A, N (M)
Teton R. from Deep Cr. to Muddy Cr. (410001)	Marias R.	28.8	AC, R (P)	SILT, FLOW, HAB, TSS (M)	A, H, N (M)
Teton R. below Muddy Cr. (410001)	Marias R.	93.0	AW, P, AG, R (P)	SO ₄ , SILT, TDS, FLOW, HAB, TSS (M) TEMP (S)	A, H, N (M)
Two Medicine R. below Two Medicine L. (41M001)	Marias R.	76.4	AC, P, AG, R (P)	SILT, FLOW, HAB, TSS (M) NUT, TDS, TEMP (S)	A, N (M)
Willow Cr. below Depot Cr. (41L001)	Cutbank Cr.	18.9	AC, P, R (P)	NUT (M) NH ₃ , pH, DO (S)	P (M)
Willow Cr. (410001)	Deep Cr.	28.9	AC (P)	SILT, FLOW, HAB (M)	A (M)

Table A8-2. Marias Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Bynum Reservoir (410003)	M	4120.1	AC (P)	SILT, FLOW (S)	A, C (S)
Eureka Reservoir (410003)	M	400.3	AC (P)	FLOW (S)	A (S)
Freezeout lake (410002)	E	3500.0	AC, P, AG, R (N)	TDS (H) MET (M)	A (H)
Lake Frances (41P006)	M	5536.0	AC, R (P)	NUT, TEMP, FLOW, PATH, TSS (M)	A (M)
Priest Butte Lake (410002)	E	300.0	AC, P, AG, R (N)	TDS (H) MET (M) DO (S)	A (H)
Tiber Reservoir (41P003)	M	17,500.1	AC (P)	SILT, FLOW, TSS (S)	A (S)

Table A9-1. Middle Missouri Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Coffee Cr. (41R001)	Arrow Cr.	28.6	P, AG (N) AW (P)	SO ₄ , TDS (H) NUT (M)	A, N (M)
Dog Cr. below Cutbank Cr. (41T002)	Missouri R.	16.0	P, AG (N)	SO ₄ , TDS (H)	A (H) N (M)
Dry Wolf Cr. (41S002)	Wolf Cr.	24.2	AW, P, AG (N)	SO ₄ , NUT, TDS (H)	A (H) N (M)
Eagle Cr. above Dog Cr. (41T002)	Dog Cr.	17.5	AC (P)	SILT, FLOW (M)	A (M)
Eagle Cr. below Dog Cr. (41T002)	Missouri R.	13.2	AW (P)	SILT, FLOW (M)	A (M)
Judith R. below Ross Fork (41S001, 41S003)	Missouri R.	67.5	AC (P)	NUT SILT, TSS (M) HAB (S)	A (M) S (S)
Little Dry Cr. (40D002)	Big Dry Cr.	74.1	AW, P, AG, I, R (N)	MET, SO ₄ , TDS, FLOW, TSS (H)	N (H)
Mason Gulch (41S002)	Judith R.	1.0	AW, P (P)	MET (M)	R (M)
Missouri R. from Marias R. to Bullwacker Cr. (41T001)	Mississippi R.	110.5	AW, P, AG (P)	NUT, TSS (M) SO ₄ , TDS (S)	A (M) H, N (S)
Missouri R. from Bullwacker Cr. to Ft. Peck Reservoir (40EJ001)	Mississippi R.	50.1	AW, P, AG, R (P)	NUT, TSS (M) MET, SO ₄ , TDS, PATH (S)	A (M) H, N (S)

Table A9-1. Middle Missouri Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Montana Gulch (40EJ002)	Missouri R.	1.0	AC, P (N)	MET (H)	R (H)
Nelson Cr. (40E002)	Fort Peck Res.	16.4	AW, P, AG, I, R (N)	MET, SO ₄ , TDS, FLOW, TSS (H)	N (M)
Ross Fork below Hauck Coulee (41S003)	Judith R.	8.7	AC (P)	NUT, TSS (M) TDS (S)	A (M) N (S)
Timber Cr. (40E002)	Fort Peck Res.	41.6	AW, P, AG, I, R (N)	MET, SO ₄ , TDS, FLOW, TSS (H)	N (H)
Warm Spring Cr. (41S002)	Judith R.	23.6	AW (P)	SILT (M)	A (M)

Table A9-2. Middle Missouri Basin impaired lakes.

LAKE NAME TROPIC STATUS (WATERBODY ID #)	SIZE	USES (DEGREE OF IMPAIRMENT OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES (MAGNITUDE)
Fort Peck Reservoir (40E001)	M	244,998.8	AW, P, R (P)	FLOW (M) MET, NUT, DO, TSS, NAQ (S)
				A, H, N (M)

Table A10-1. Musselshell Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Careless Cr. above Mouth (40A003)	Musselshell R.	8.8	AW, R (P)	NUT, FLOW, TSS (M)	A (M)
Musselshell R. above Deadmans Basin Diversion Canal (40A001)	Fort Peck Res.	39.1	AC, P (P)	SO ₄ , SILT, TDS, TEMP, FLOW, HAB (S)	A, C, H (S)
Musselshell R. below Deadmans Basin Diversion Canal (40A003)	Fort Peck Res.	67.8	AW (P)	NUT, SILT, FLOW (M)	A, C, H (M)
Musselshell R. above Flatwillow Cr. (40C001)	Fort Peck Res.	84.4	AW (P)	SILT, FLOW (M) TEMP (S)	A, H (M)
Musselshell R. below Flatwillow Cr. (40C003)	Fort Peck Res.	47.2	AW (P)	SILT, FLOW (M)	A, H (M)
McDonald Cr. (40B002)	Box Elder Cr.	37.5	AW (P)	SILT (M)	A (M)
Yellow Water Cr. (40B001)	Flatwillow Cr.	22.3	P, AG (N)	TDS (H) MET (M)	N (H) A (S)

Table A10-2. Musselshell Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Deadmans Basin Res. (40A005)	M	1902.6	AC (P)	FLOW, HAB (M)	A, N (M)
Lebo L. (40A005)	E	314.1	AC (P)	DO, FLOW, TSS (M)	A, N (M)
Martinsdale Res. (40A005)	M	984.9	AC (P)	FLOW (S)	A (S)
War Horse L. (40B004)	U	1000.0	AC (P)	DO, FLOW, HAB (M)	N (M) A (S)

Table All-1. Milk Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Beaver Cr. below Hwy. 234 (40J002)	Milk R.	15.0	AC (P)	NUT, SILT, TEMP, FLOW (M)	A, H (M)
Beaver Cr. from Dix Cr. to Black Coulee (40M001)	Milk R.	21.2	AW (P)	SILT, FLOW (M)	A (M)
Beaver Cr. below Black Coulee (40M001)	Milk R.	44.0	AW, P, AG, R (P)	NUT, TDS, FLOW (M) SO ₄ , TSS (S)	A, H (M)
Big Sandy Cr. below Lonesome Coulee (40H001)	Milk R.	34.6	AW, AG (P)	SILT, TDS, TEMP (M)	A, H (M)
Black Coulee (40J005)	Cottonwood Cr.	17.4	AW (P)	SILT, FLOW (M)	A, N (M)
Bull Hook Cr. (40J002)	Milk R.	14.5	AC (P)	NUT, SILT, TEMP (M)	A, H (M)
Cottonwood Cr. below Black Coulee (40J005)	Milk R.	28.6	AW (P)	SILT, FLOW, TSS (M)	A, N (M)
Little Box Elder Cr. (40J002)	Milk R.	30.2	AC (P)	NUT, SILT, TEMP (M)	A, H (M)
Little Peoples Cr. (40I001)	S. Fork Peoples Cr.	19.5	AC, P (P)	MET (M) TSS (S)	R (M) A (S)
Milk R. from M. & S. Forks to Western Crossing (40F001)	Missouri R.	37.2	AC (P)	SILT (M) NUT, TDS (S)	A (M)
Milk R. from Eastern Crossing (Canada) to Fresno Reservoir (40F003)	Missouri R.	21.7	AW (P)	SILT, FLOW, HAB (M) NUT, TDS (S)	A (M)

Table All-1. Milk Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Milk R. from Fresno Dam to Whitewater Cr. (40J001)	Missouri R.	176.9	AW, P, AG (P)	TDS, FLOW, HAB, TSS (M) SO ₄ , NUT (S)	A, H (M) P (S)
Milk R. from Whitewater Cr. to Cherry Cr. (400001)	Missouri R.	67.7	AW, P, AG (P)	TDS, FLOW, HAB, TSS (M) SO ₄ , NUT (S)	A, H (M) P (S)
Milk R. below Cherry Cr. (400001)	Missouri R.	46.9	AW, P, AG (P)	TDS, FLOW, HAB, TSS (M) SO ₄ , NUT (S)	P, A, H (M)
Peoples Cr. above Milk R. (40I001)	Milk R.	34.7	AC, P, AG (P)	SO ₄ , TDS, TSS (M) TEMP, FLOW (S)	A (M)
Sage Cr. below Russell Coulee (40G001)	Big Sandy Cr.	57.2	AC, P (N) AG (P)	TDS, TEMP (H)	A (H)
Whitewater Cr. (40K001)	Milk R.	53.1	AW (P)	SILT, FLOW (M)	A, N (M)

Table All-2. Milk Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Fresno Reservoir	M	3995.6	AW, P, AG, R (P)	NUT, TSS (M) MET, SO ₄ , TDS, TEMP PATH (S)	A (M)
Lake Bowdoin	E	3500.0	AW, P, AG (N)	TDS (H)	A (H)
Nelson Reservoir	E	3901.7	AC (P)	NUT, FLOW, NOX (S)	A, L (S)

Table A12-1. Lower Missouri Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Big Muddy Cr. from Whitetail Cr. to Antelope Cr. (40R001)	Missouri R.	50.2	AW (P)	SILT, TSS (M) FLOW, HAB (S)	A, N (M)
Big Muddy Cr. below Antelope Cr. (40R001)	Missouri R.	54.8	AW, P, R (P)	NUT, SILT, DO, TSS (M) NH ₃ , FLOW (S)	P, A, N (M)
Butte Cr. (40Q002)	Poplar R.	27.2	P, AG (P)	TDS (M)	A (M)
Charlie Cr. (40S004)	Missouri R.	16.2	AW (P)	SILT, TDS, HAB (M)	A (M)
E. Fork Poplar R. (40Q003)	Poplar R.	20.9	AC, P, AG, R (P)	MET, DO, FLOW (M) NH ₃ , SO ₄ , NUT, TDS (S)	H, N (M) A (S)
Missouri R. from Ft. Peck Dam to Poplar R. (40S001)	Mississippi R.	89.2	AW, P, R (P)	HAB, TSS (M) MET, NUT (S)	H (M) P, A, N (S)
Missouri R. below Poplar R. (40S003)	Mississippi R.	99.0	AW, R (P)	HAB, TSS (M) NUT (S)	H (M) P, A (S)
Poplar R. (40Q001)	Missouri R.	103.4	AC, P, AG, R (P)	SO ₄ , NUT, pH, SILT, TDS, TEMP (S)	A, N (S)
Prairie Elk Cr. (40S002)	Missouri R.	25.9	AW, R (P)	MET, TSS (M) NUT (S)	N (M) A (S)
Redwater R. (40P001)	Missouri R.	111.3	AW (P)	SILT, TEMP, TSS (S)	A, N (S)
Sand Cr. (40S002)	Missouri R.	13.2	AW (P)	MET, TSS (M) NUT (S)	N (M)

Table A12-2. Lower Missouri Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Medicine L. (40R003)	E	8599.0	AW, P, R (P)	NUT, TDS, TSS (M)	A, N (M)

Table A13-1. Upper Yellowstone Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Bear Cr. (43B002)	Yellowstone R.	9.6	AC (P)	HAB (M)	R (M)
Bear Cr. (43D002)	Clarks Fork R.	14.3	AC, P (P)	MET, SILT, TSS (M) SO ₄ , FLOW, HAB (S)	A, R, H, N (M) C (S)
Big Cr. (43B004)	Yellowstone R.	15.6	AC (P)	FLOW (M) TSS (S)	A (M)
Bluewater Cr. (43D002)	Clarks Fork R.	14.5	AC, P (P)	SILT, FLOW (M) TEMP (S)	A, H (M)
Canyon Cr. (43QJ002)	Yellowstone R.	24.8	AC, P, AG, R (P)	NUT, TDS, TEMP, FLOW, TSS (M)	A (M)
Duck Cr. (43QJ002)	Yellowstone R.	11.9	P, AG (P)	SO ₄ , TDS (S)	N (S)
Elbow Cr. (43D002)	Clarks Fork R.	27.5	AC, P (P)	SILT, TSS (M)	A (M)
Fisher Cr. (43D002)	Clarks Fork R.	3.0	AC, P, R (N) AG (P)	MET (H) pH, (M)	R (H)
Nye Cr. (43C001)	Stillwater R.	3.0	AC (P)	HAB (M)	R (M)
Otter Cr. (43B004)	Yellowstone R.	32.3	AC (P)	SILT, FLOW, HAB, TSS (M) NUT (S)	A, H (M)
Pine Cr. (43B004)	Yellowstone R.	9.7	AC (P)	FLOW (M) HAB (S)	A (M) S (S)
Potter Cr. (43A001)	Shields R.	18.5	AC (P)	SILT, TSS (M)	S, N (M) A (S)

Table A13-1. Upper Yellowstone Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Red Lodge Cr. above Cooney Res. (43D002)	Rock Cr.	21.9	AC (P)	SILT, TSS (M)	A, N (M)
Red Lodge Cr. below Cooney Res. (43D002)	Rock Cr.	8.1	AC (P)	SILT, FLOW, TSS (M) HAB (S)	A, H, N (M) O (S)
Reese Cr. (43B002)	Yellowstone R.	5.4	AC (P)	FLOW (M) HAB (S)	A (M)
Rock Cr. below Red Lodge Cr. (43D002)	Clarks Fork R.	14.8	AC (P)	SILT, HAB, TSS (S)	A (S)
Shields R. (43A001)	Yellowstone R.	52.7	AC (P)	SILT, FLOW, HAB (M) TSS (S)	A, S, H, N (M) C (S)
Silvertip Cr. (43D002)	Clarks Fork R.	14.9	AC, P (N) AG (P)	SO ₄ , TDS, TSS (H) NUT (M)	N (H)
Six Mile Cr. (43B004)	Yellowstone R.	14.3	AC (P)	FLOW (M)	A (M)
Soda Butte Cr. (43B002)	Lamar R.	5.5	AC, P, R (N)	MET (H) TSS (S)	R (H) N (S)
Stillwater R. above Wounded Man Cr. (43C001)	Yellowstone R.	6.6	AC, P (P)	MET (M)	R (M)
Suce Cr. (43B004)	Yellowstone R.	8.1	AC (P)	FLOW (M)	A (M)
Tom Miner Cr. (43B004)	Yellowstone R.	13.3	AC (P)	TSS (S)	A, S, N (S)
W. Rosebud Cr. (43C001)	Rosebud Cr.	28.0	AC (P)	FLOW, HAB (M)	H (M) A, C (S)

Table A13-1. Upper Yellowstone Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Willow Cr. (43D002)	Red Lodge Cr.	23.0	AC (P)	SILT, TSS (M) HAB (S)	A (M) C (S)
Yellowstone R. above Reese Cr. (43B001)	Missouri R.	13.1	AC, R (P)	TSS (M) NUT (S)	N (M) C (S)
Yellowstone R. from Reese Cr. to Bridger Cr. (43B003)	Missouri R.	119.1	AC, R (P)	TSS (M) NUT (S)	N (M) P, A, C (S)
Yellowstone R. from Bridger Cr. to Alkali Cr. (43QJ001)	Missouri R.	80.9	AC (P)	TSS (M) NUT (S)	A, N (M) P, R (S)
Clarks Fork of the Yellowstone R. (43D001)	Yellowstone R.	66.5	AC, P, R (P)	SILT, FLOW, TSS (M) NUT, TDS, TEMP (S)	A, H, N (M) R (S)

Table A13-2. Upper Yellowstone Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Cooney Reservoir	U	815.4	AC (P)	SILT, FLOW, NAQ (S)	A, N (S)

Table A14-1. Middle Yellowstone Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Beauvais Cr. (43P004)	Big Horn R.	35.2	AC, P, AG (P)	TDS, TSS (M) SO ₄ (S)	N (M) A (S)
Beaver Cr. (42C002)	Tongue R.	17.8	AW, AG (P)	TDS (M) MET (S)	N (M)
Bighorn R. below Yellowtail Dam (43P003, 43P005)	Yellowstone R.	85.2	AC, P (P)	DO, FLOW (M) SO ₄ , pH, TDS, TEMP, TSS (S)	H, O (M) A, N (S)
Cook Cr. (42C002)	Tongue R.	15.0	AW, AG (P)	MET, TDS, TSS (S)	N (S)
Deer Cr. (42B002)	Tongue R. Res.	10.4	AW, AG (P)	TDS (M) MET TSS (S)	N (M)
E. Fork Armells Cr. (43KJ002)	Armells Cr.	19.3	AG (P)	TDS (S)	N (S)
East Fork Cr. (43E001)	Pryor Cr.	18.9	P, AG (N)	SO ₄ , TDS (H) MET (S)	N (H)
E. Fork Pryor Cr. (43E001)	Pryor Cr.	28.5	AC, P (P)	TSS (M) MET, SO ₄ (S)	N (M)
E. Fork Sarpy Cr. (42KJ002)	Sarpy Cr.	17.7	AG (P)	TDS (S)	N (S)
Fly Cr. (43Q002)	Yellowstone R.	42.0	AG (P)	TDS (S)	N (S)
Foster Cr. (42C002)	Tongue R.	21.2	AW, AG (P)	TDS (M) MET (S)	N (M)
Great Porcupine Cr. (42KJ003)	Yellowstone R.	63.3	AG (P)	TDS (S)	N (S)

Table A14-1. Middle Yellowstone Basin impaired streams. (Continued)

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Hanging Woman Cr. (42B002)	Tongue R.	29.5	AW, AG (P)	MET, TDS (M) FLOW (S)	N (M) A (S)
Hay Cr. (43E001)	Pryor Cr.	15.2	AC, P (P)	TSS (M) MET (S)	N (M)
Little Bighorn R. (430001)	Bighorn R.	79.5	AC, P (P)	MET, SO ₄ , TDS, TEMP, FLOW, HAB, TSS (S)	A, H, N (S)
Little Porcupine Cr. (42KJ002)	Yellowstone R.	47.8	AW, AG (P)	NUT, TDS (S)	A, N (S)
Little Pumpkin Cr. (42C002)	Tongue R.	18.9	AG (P)	TDS (M)	N (M)
Otter Cr. (42C002)	Tongue R.	52.7	AW, P (P)	TDS, HAB (M) MET, TSS (S)	N (M) A, C (S)
Owl Cr. (430001)	Little Bighorn R.	24.9	AC, P (P)	MET, TSS (M) TDS (S)	A, N (M)
Pryor Cr. below E. Fork Pryor Cr. (43E001)	Yellowstone R.	34.8	AC, P (P)	TSS (M) MET, SO ₄ , FLOW (S)	A, N (M)
Pumpkin Cr. (42C002)	Tongue R.	87.4	AW, AG (P)	TDS (M) TEMP, FLOW (S)	N (M) A (S)
Reno Cr. (430001)	Little Bighorn R.	14.9	AG (N) AC, P (P)	TDS (H) MET, SO ₄ , TSS (S)	N (H) A (S)
Reservation Cr. (42KJ002)	Yellowstone R.	17.7	AG (P)	TDS (S)	N (S)

Table A14-1. Middle Yellowstone Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Rosebud Cr. (42A001)	Yellowstone R.	114.0	AW, P (P)	TSS (M) MET, SO ₄ , NUT, TDS, FLOW (S)	N (M) A (S)
Rotten Grass Cr. (43P004)	Big Horn R.	38.2	AC, P (P)	TDS, TSS (M) MET, SO ₄ , NUT (S)	N (M) A (S)
Sarpy Cr. (42KJ002)	Yellowstone R.	58.7	AG (P)	TDS (S)	N (S)
Smith Cr. (42KJ002)	Yellowstone R.	8.7	AG (P)	TDS (S)	N (S)
Soap Cr. (43P004)	Big Horn R.	26.5	AC, P (P)	SILT (M) MET, SO ₄ , TDS (S)	N (M) A (S)
Squirrel Cr. (42B002)	Tongue R.	18.2	AW (P)	MET (S)	N (S)
Starved-to-Death Cr. (42KJ002)	Yellowstone R.	16.0	AG (P)	TDS (S)	N (S)
Tongue R. above Tongue R. Reservoir (42B001)	Yellowstone R.	4.2	AC, AG (P)	MET, SO ₄ , TDS, TEMP, FLOW (S)	A, N (S)
Tongue R. from Tongue R. Reservoir to Hanging Woman Cr. (42B001)	Yellowstone R.	30.8	AC (P)	FLOW (S)	A, H (S)
Tongue R. below Hanging Woman Cr. (42C001)	Yellowstone R.	138.4	AW, AG (P)	MET, SO ₄ , TDS, FLOW, TSS (S)	A, H, N (S)
Tullock Cr. below East Fork (43P006)	Bighorn R.	33.6	AC, P, AG (P)	SO ₄ , TDS, TSS (M) MET, NUT, FLOW (S)	N (M) A (S)
W. Fork Armells Cr. (42KJ002)	Armells Cr.	19.5	AG (P)	TDS (S)	N (S)

Table A14-1. Middle Yellowstone Basin impaired streams. (Continued).

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Woody Cr. (43P004)	Bighorn R.	11.7	P, AG (N) AC (P)	SO ₄ , TDS (H) MET (M) TSS (S)	N (H)
Yellowstone R. from Alkali Cr. to Tongue R. (42KJ001, 43Q001)	Missouri R.	185.0	AW, P, R (P)	TSS (M) MET, NH ₃ , SO ₄ , NUT, TDS (S)	A, N (M) P (S)

Table A14-2. Middle Yellowstone Basin impaired lakes.

LAKE NAME (WATERBODY ID #)	TROPHIC STATUS	SIZE (ACRES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Tongue R. Reservoir (42B003)	E	3500.1	AC, R (P)	NUT (M) DO, TSS (S)	A (M) P (S)

Table A15-1. Lower Yellowstone Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Bennie Peer Cr. (42M002)	Yellowstone R.	5.6	AW, P, AG (P)	TDS, HAB, TSS (M) FLOW (S)	A, H (M)
Cabin Cr. (42M002)	Yellowstone R.	53.4	AW, P, AG (P)	SO ₄ , TDS (M) NUT (S)	N (M) A (S)
Cedar Cr. (42M002)	Yellowstone R.	38.1	AW, P, AG (P)	SO ₄ , TDS, TSS (M)	N (M) A (S)
Crane Cr. (42M002)	Yellowstone R.	19.2	AW, P, AG (P)	TDS, FLOW, HAB, TSS (M)	A, H (M)
First Hay Cr. (42M002)	Yellowstone R.	23.3	AW, P, AG (P)	TDS, FLOW, HAB, TSS (M)	A, H (M)
Fourmile Cr. (42M002)	Yellowstone R.	19.9	AW, P, AG (P)	TDS, HAB, TSS (M) FLOW (S)	A, H (M)
Fox Cr. (including North Fork) (42M002)	Yellowstone R.	18.5	AW, P, AG (P)	TDS, HAB, TSS (M) SO ₄ , FLOW (S)	A, H (M)
Glendive Cr. (42M002)	Yellowstone R.	38.5	AW, P, AG (P)	TDS (M) SO ₄ , FLOW, TSS (S)	N (M) A (S)
Little Powder R. (42I001)	Powder R.	50.8	AW, P, AG, R (P)	SO ₄ , SILT, TDS (M) FLOW, TSS (S)	N (M) A, H (S)
Lonetree Cr. (42M002)	Yellowstone R.	12.1	AW, P, AG (P)	SO ₄ , TDS, TEMP, FLOW, HAB, TSS (M)	A, H (M) C (S)
Mizpah Cr. (42J005)	Powder R.	80.0	AW, P, AG, R (P)	SO ₄ , DO, TSS (M)	N (M) A (S)

Table A15-1. Lower Yellowstone Basin impaired streams. (Continued)

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Muster Cr. (42K002)	Yellowstone R.	21.7 AW, P, AG, R (P)	NUT, TSS (M) FLOW (S)	N (M) A (S)
O'Brien Cr. (42M002)	Yellowstone R.	13.8 AW, P, AG (P)	TDS, HAB, TSS (M)	A (M)
O'Fallon Cr. (42L001)	Yellowstone R.	99.2 AW, P, AG (P)	SO ₄ , TDS (M) NUT, TSS (S)	N (M) A (S)
Pennel Cr. above O'Fallon Cr. (42L001)	O'Fallon Cr.	11.0 AG (P)	TDS (M)	A (S)
Powder R. (42J001, 42J003)	Yellowstone R.	199.6 AW, P, AG, R (P)	SO ₄ , TDS, TSS (M) MET, NUT, FLOW, PATH (S)	R, N (M) A, H (S)
Sand Cr. (42K002)	Yellowstone R.	21.2 AW, P, AG, R (P)	NUT, TSS (M) TDS, FLOW (S)	N (M)
Sandstone Cr. (42L001)	O'Fallon Cr.	41.0 AW, P, AG (P)	SO ₄ , TDS, TSS (M)	N (M) A (S)
Smith Cr. (42M002)	Yellowstone R.	13.6 AW, P, AG (P)	TDS, HAB, TSS (M) FLOW (S)	A, H (M)
Sunday Cr. (42K002)	Yellowstone R.	11.8 AW, P, AG, R (P)	NUT, TSS (M) TDS, FLOW (S)	N (M) A (S)
Tributaries of Mizpah Cr. (42J005)	Mizpah Cr.	300.9 AW, P, AG, R (P)	SO ₄ , DO, TSS (M)	N (M)
Tributaries of O'Fallon Cr. (42L001)	O'Fallon Cr.	387.5 AW, P, AG (P)	SO ₄ , TDS (M) NUT, TSS (S)	N (M)

Table A15-1. Lower Yellowstone Basin impaired streams. (Continued)

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Tributaries of Little Powder R. (42I001)	Little Powder R.	224.05	AW, P, AG, R (P)	SO ₄ , SILT, TDS (M) TSS (S)	N (M)
Tributaries of Powder R. below L. Powder R. (42J004)	Powder R.	607.9	AW, P, AG, R (P)	SO ₄ , TDS, TSS (M) MET, NUT, FLOW, PATH (S)	N (M) A, H (S)
Tributaries of Powder R. above L. Powder R. (42J002)	Powder R.	277.5	AW, P, AG, R (P)	SO ₄ , TDS, TSS (M) MET, NUT, FLOW, PATH (S)	N (M)
Yellowstone R. below Tongue R. (42M001, 42K001)	Missouri R.	176.2	AW, P, R (P)	HAB, TSS (M) SO ₄ , NUT, pH, TDS, PATH (S)	A, H (M) P (S)

Table A16-1. Little Missouri Basin impaired streams.

STREAM SEGMENT (WATERBODY ID #)	TRIBUTARY TO	SIZE (MILES)	PROBABLE IMPAIRED USES (DEGREE OF USE SUPPORT)	PROBABLE CAUSES OF IMPAIRMENT (MAGNITUDE)	PROBABLE SOURCES OF IMPAIRMENT (MAGNITUDE)
Beaver Cr. (39G001)	L. Missouri R.	72.4	AW, R (P)	SILT (M) NUT (S)	H, N (M) A (S)

300 copies of this public document were published at an estimated cost of \$4.86 per copy for a total of \$1,458, which includes \$1,048 for printing and \$410 for distribution.